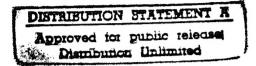


of Engineers

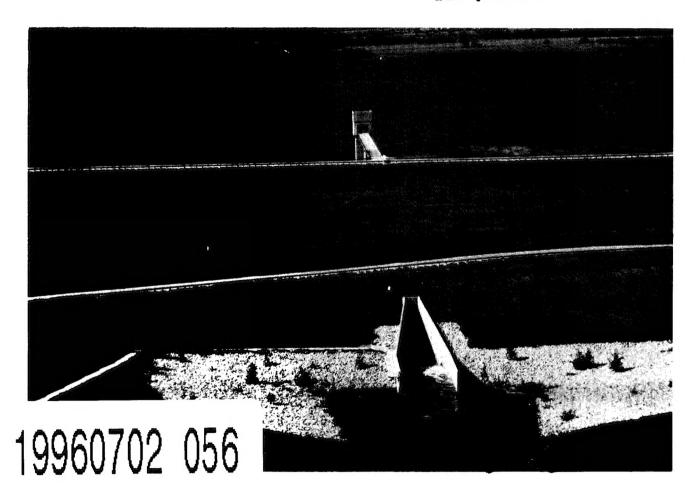
Fort Worth District



Aquilla Lake Final Foundation Report

Embankment, Spillway and Outlet Works

DTIC QUALITY INSPECTED 4

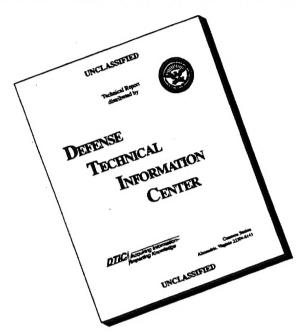


Volume II

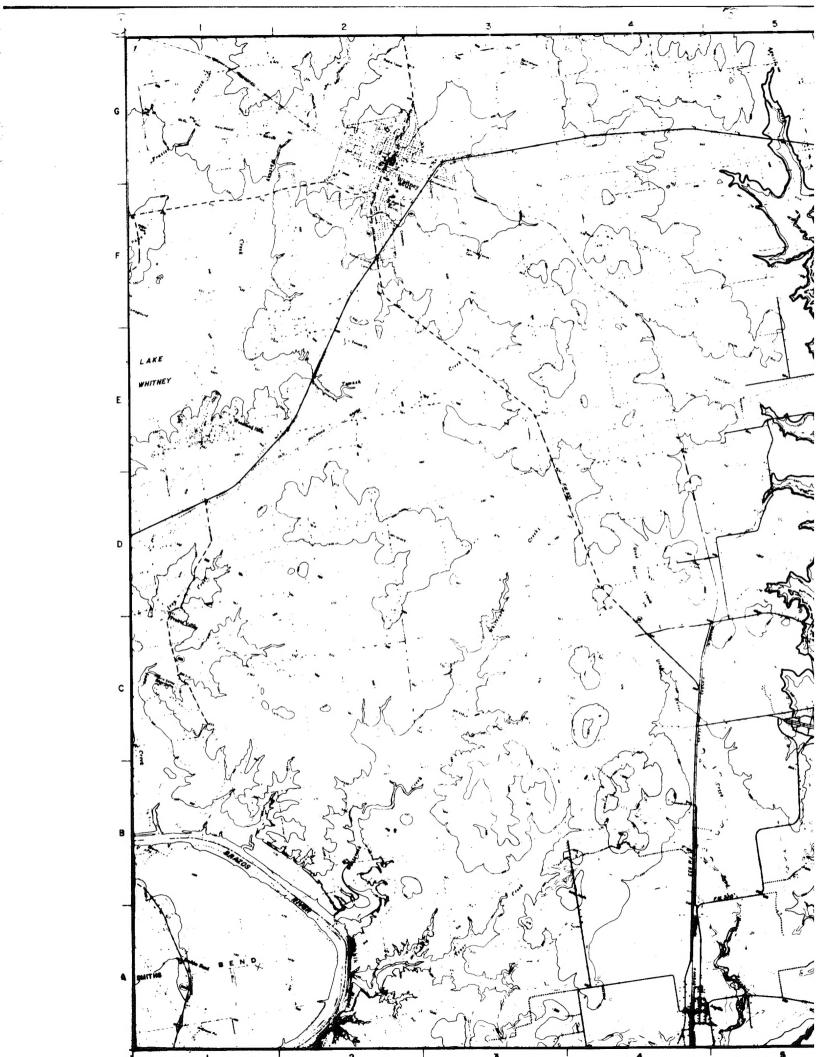
REVISED
March 1996

November 1987

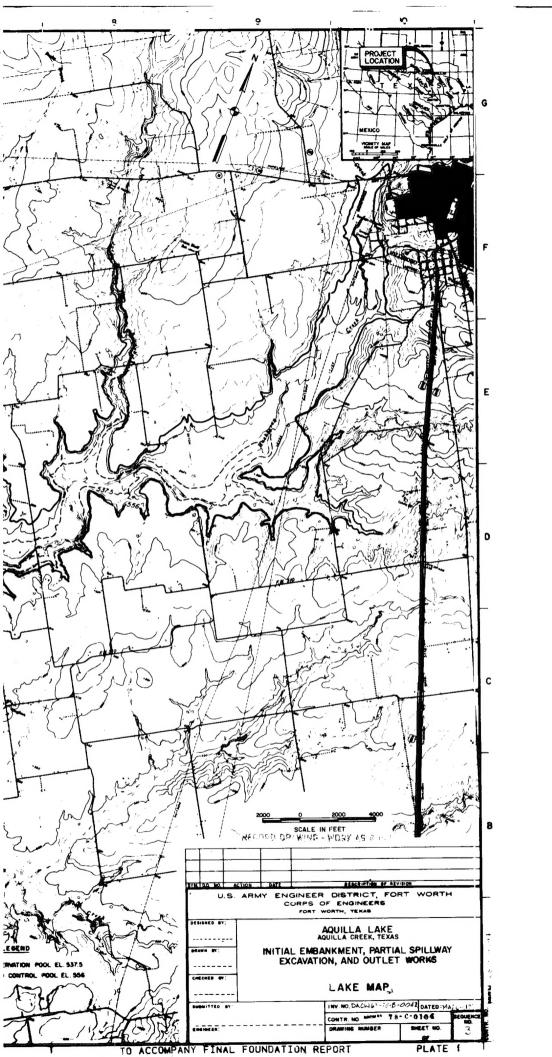
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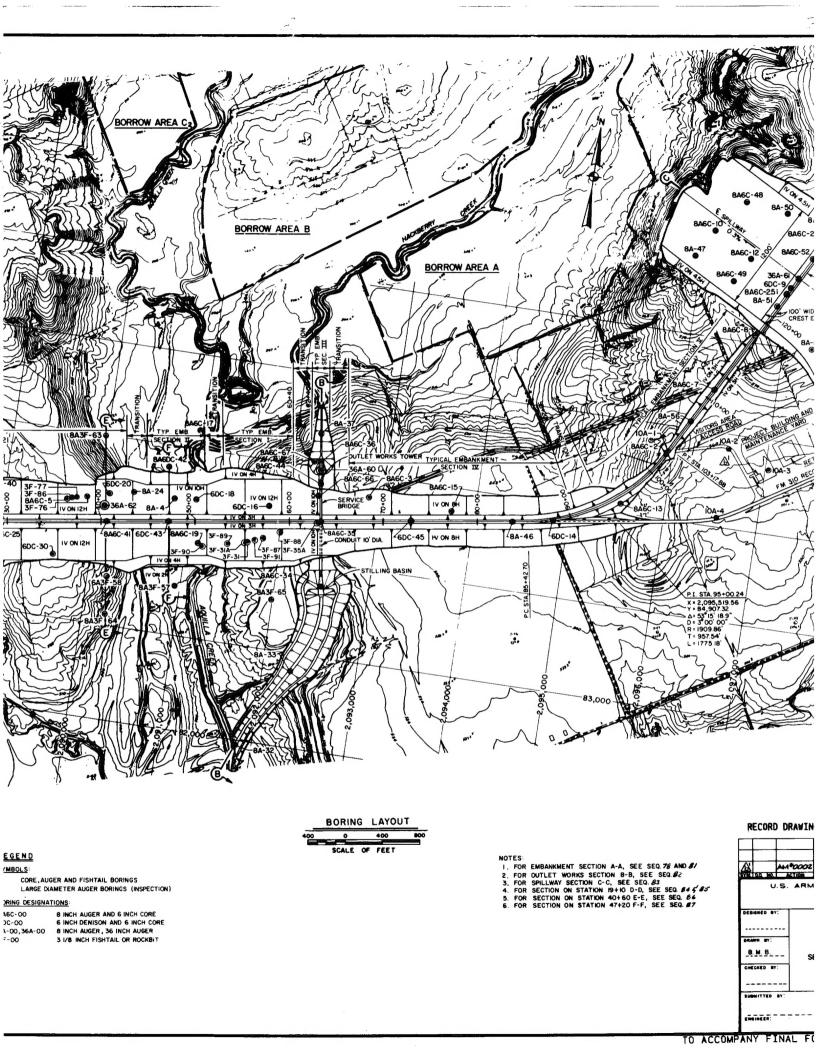


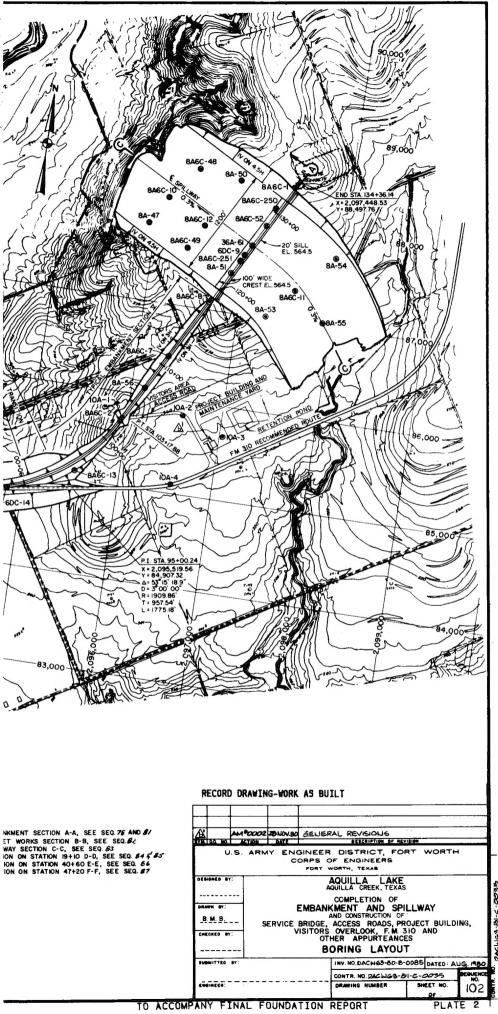
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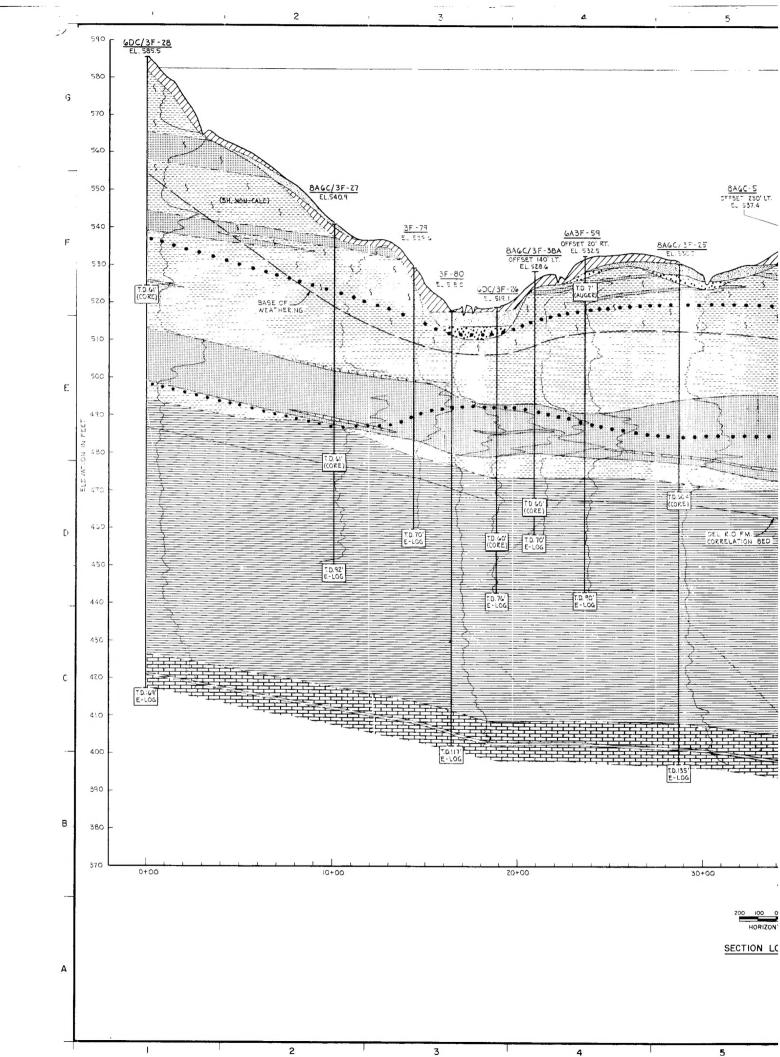
SYMBOLS

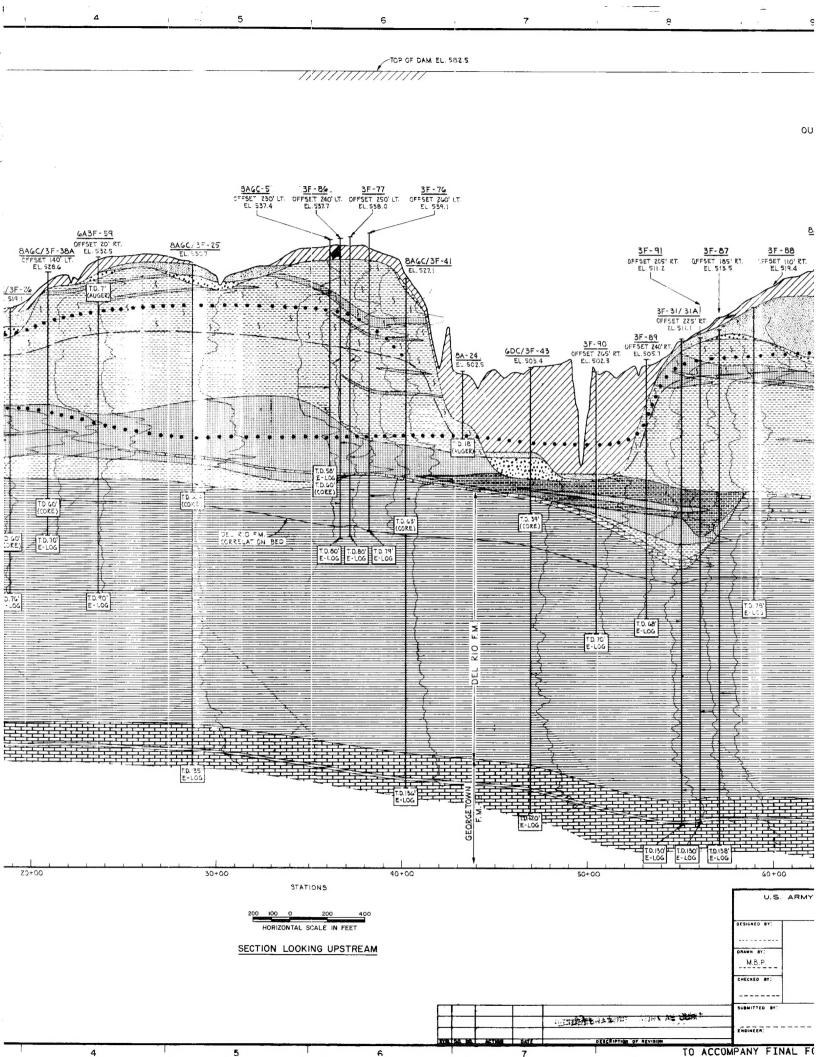
CORE, AUGER AND FISHTAIL BORINGS
LARGE DIAMETER AUGER BORINGS (INSPECTION)

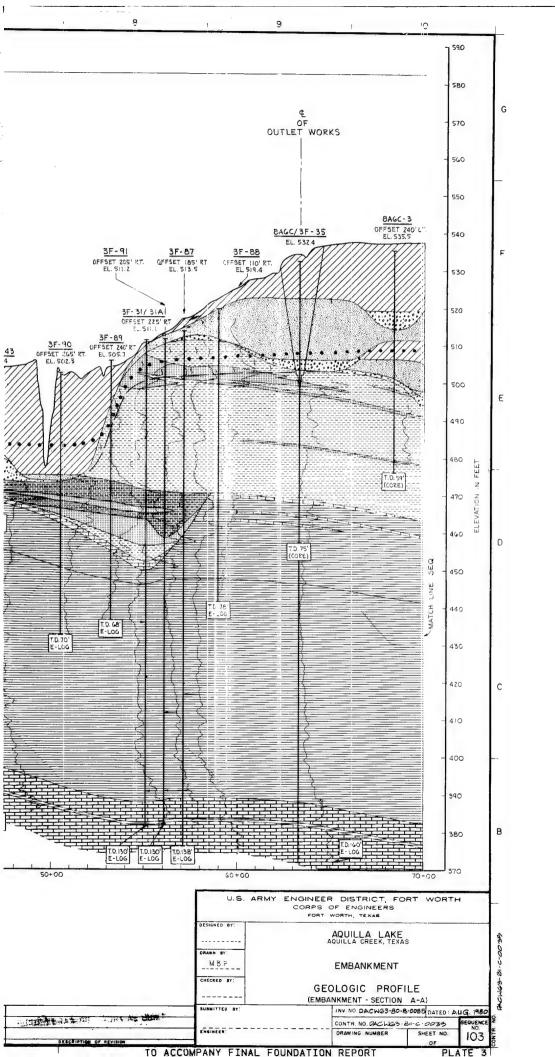
BORING DESIGNATIONS

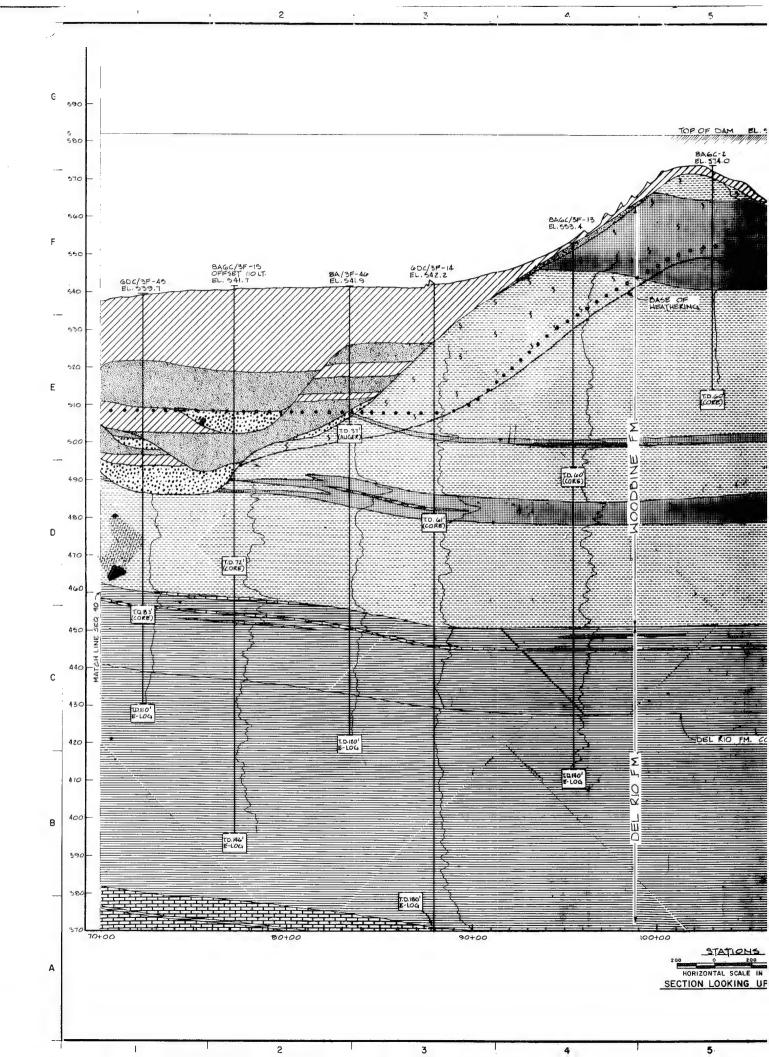


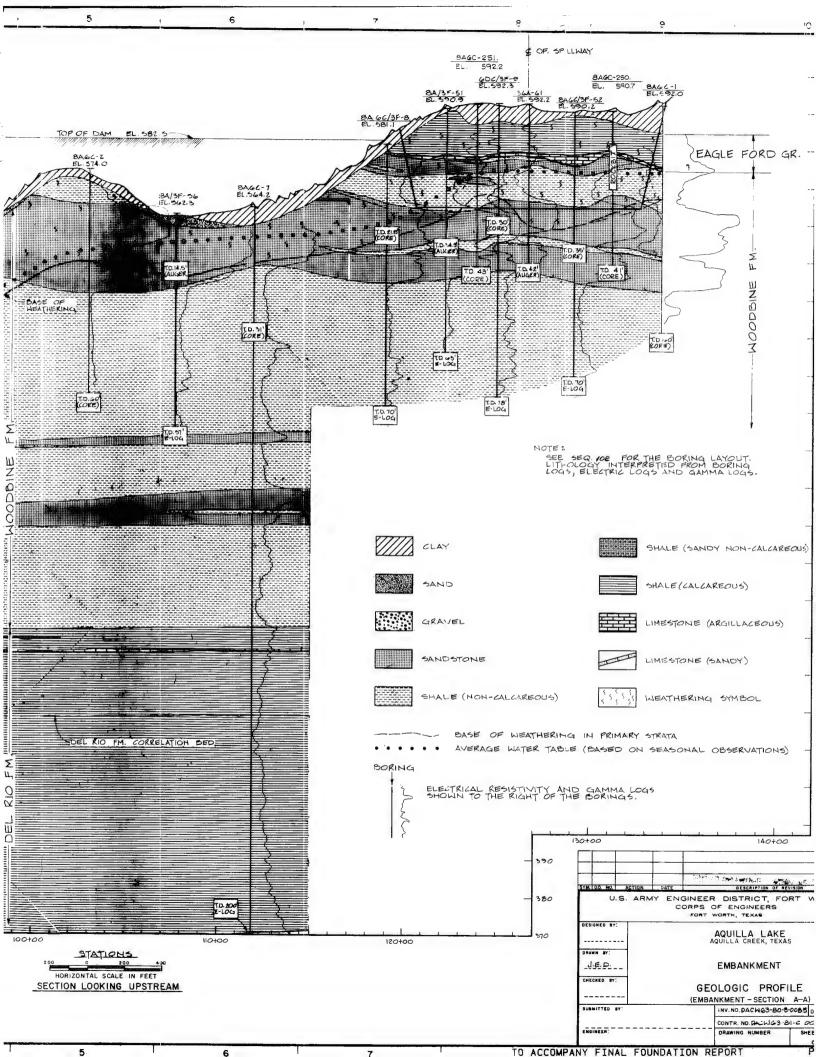


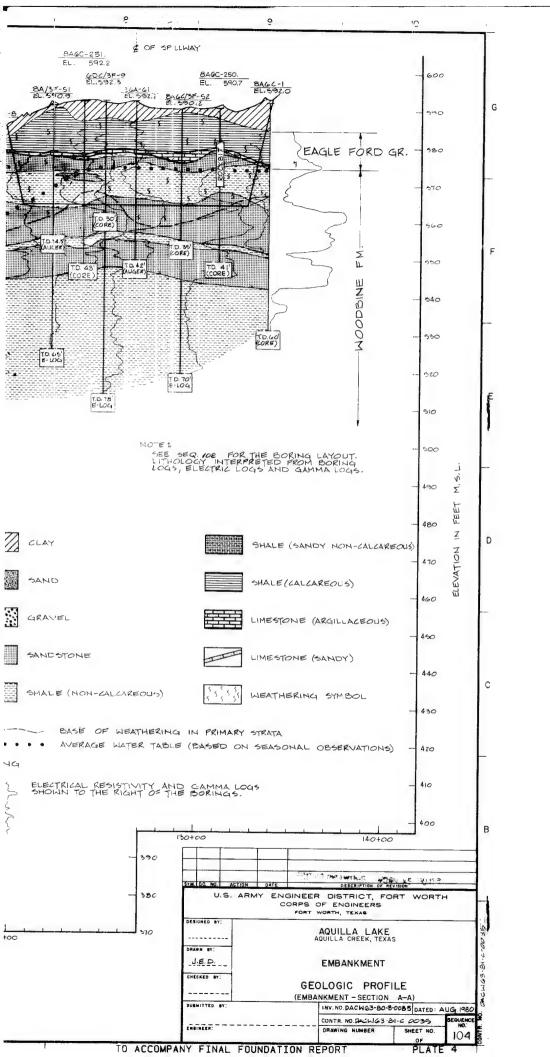


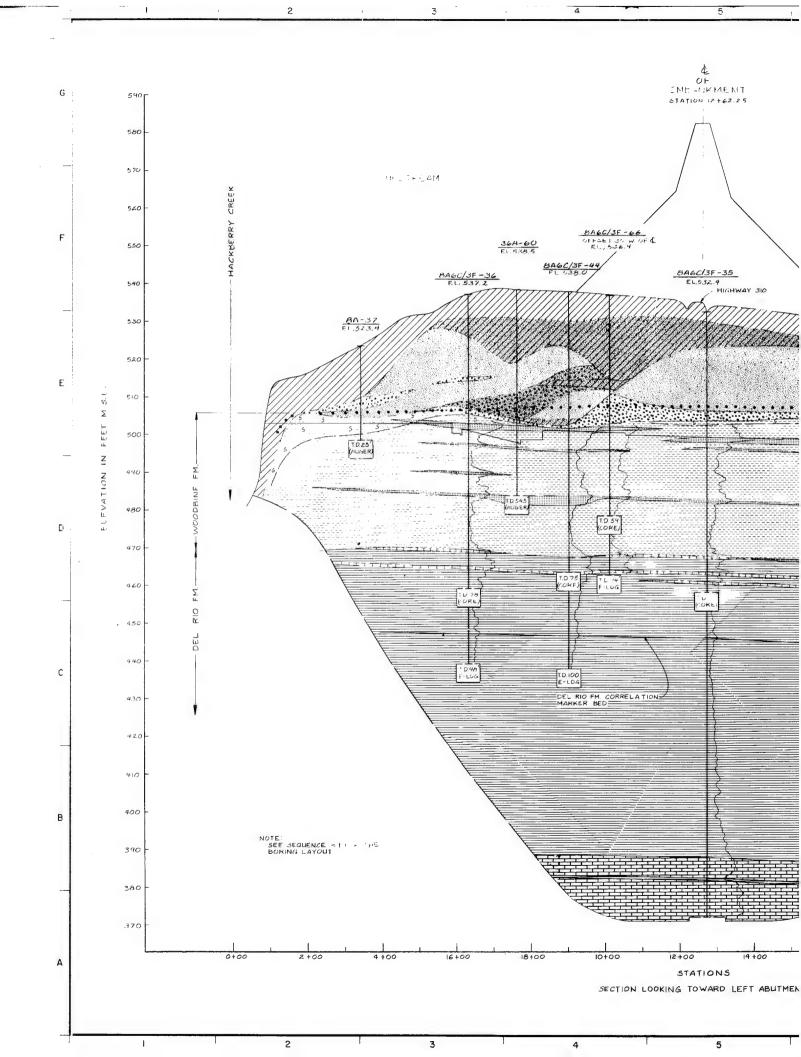


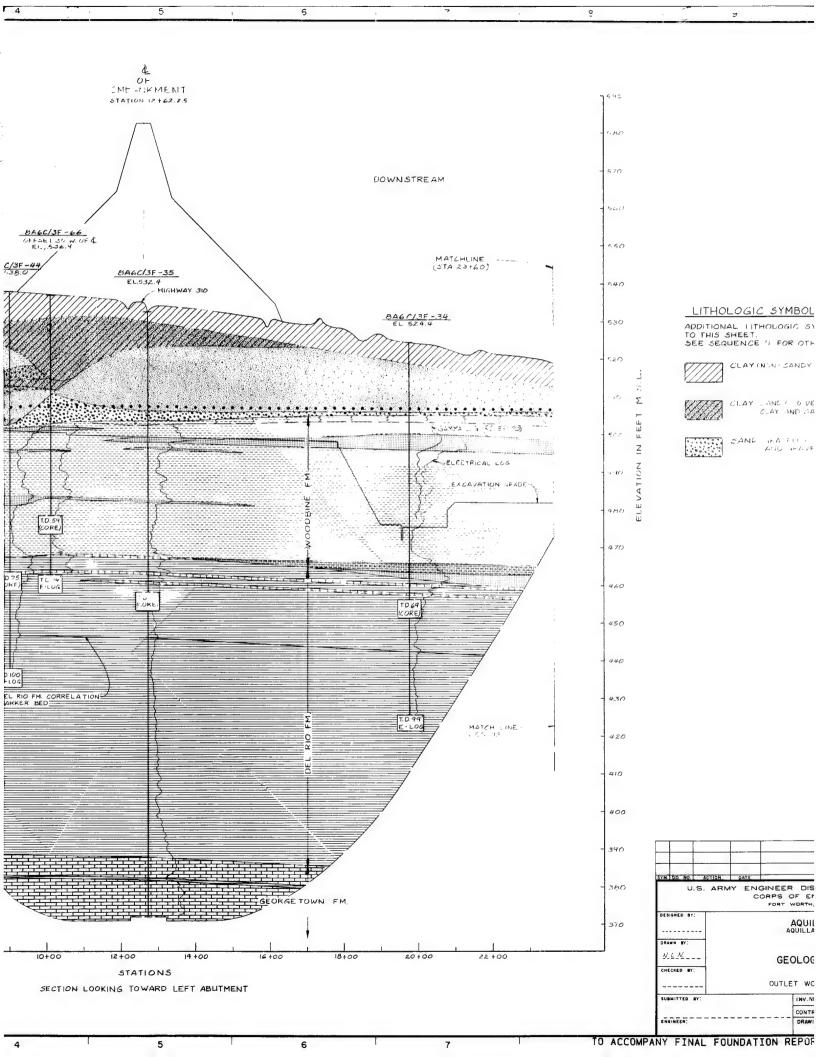


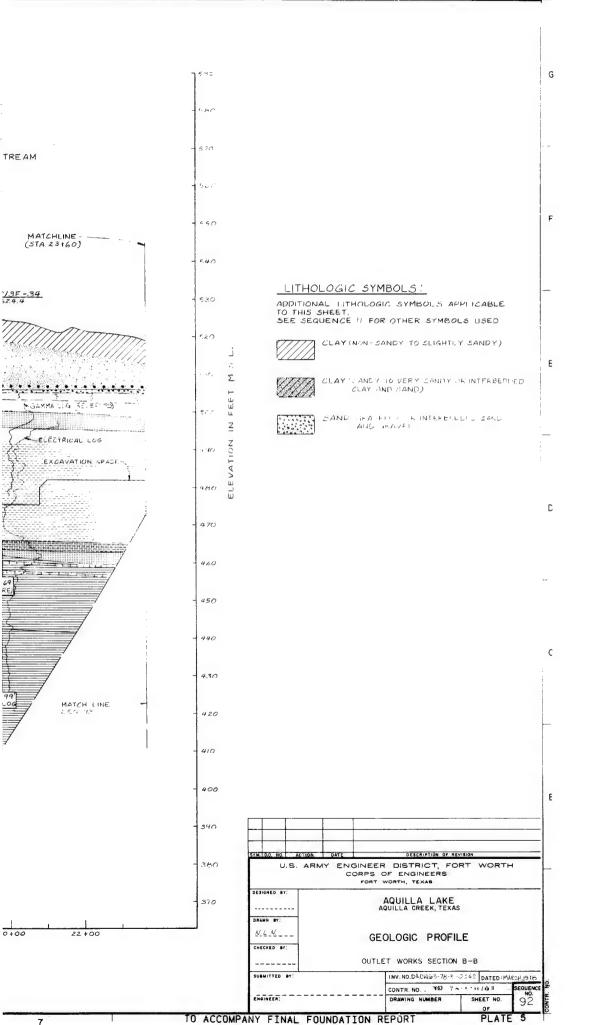




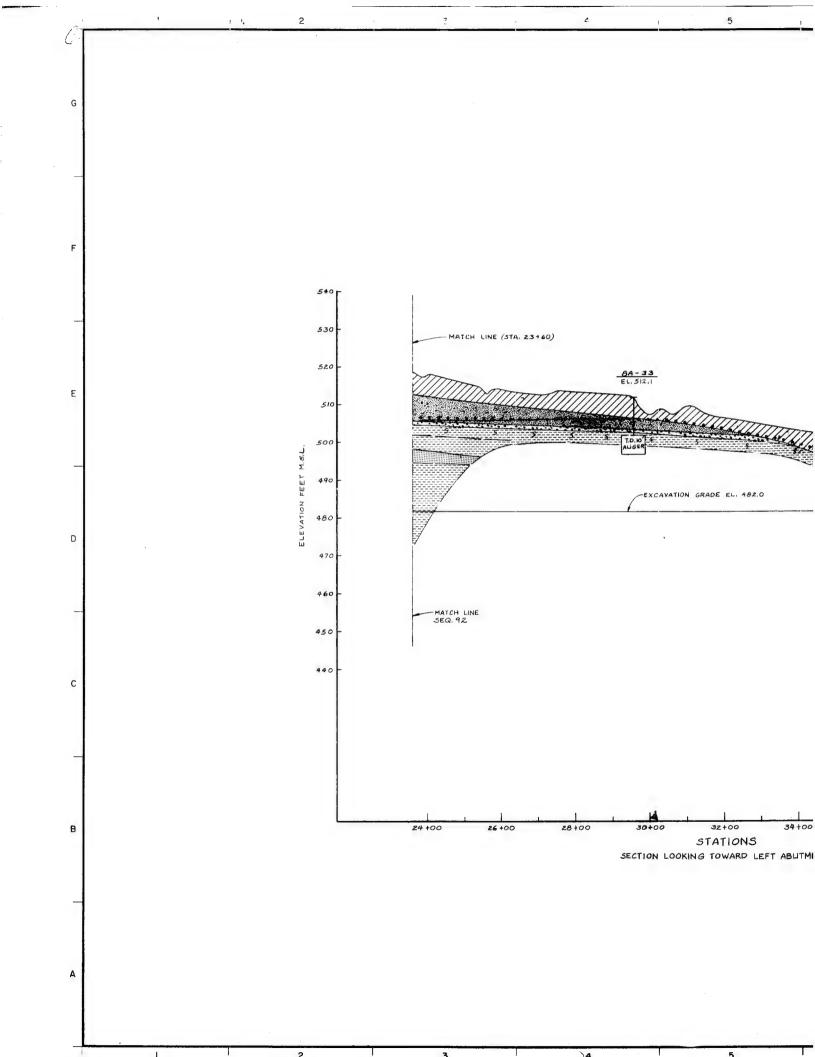


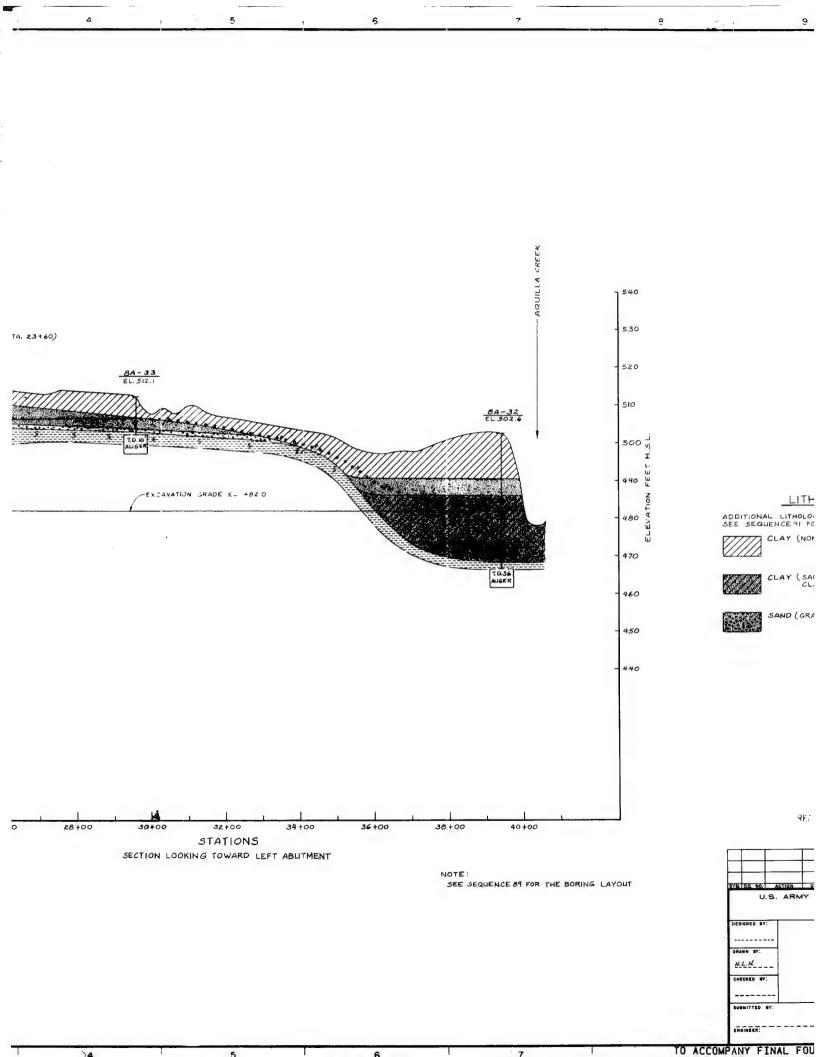


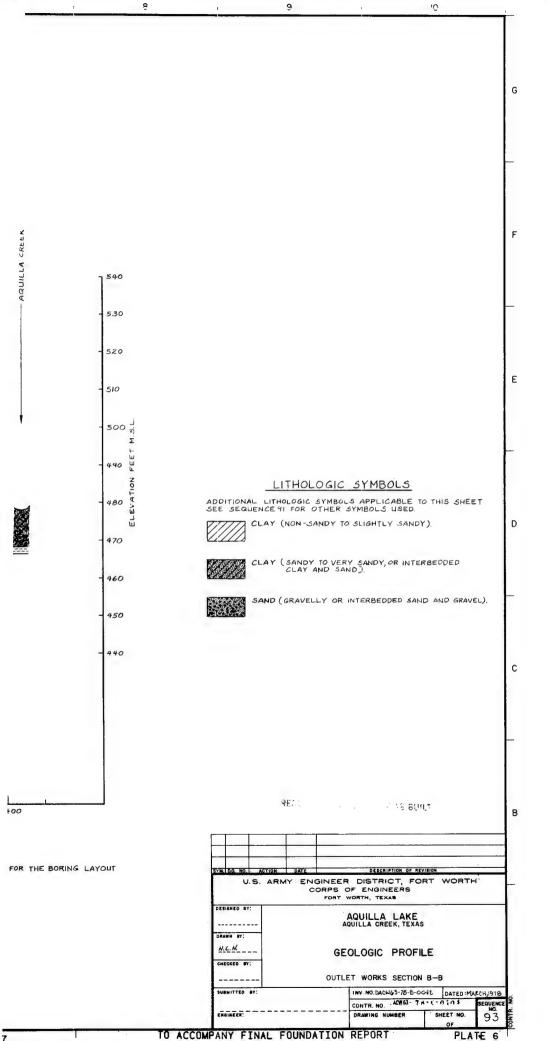




'







TO ACCOMPANY FINAL FOUNDATION REPORT

3 4 5

<u>UPSTREAM</u> 600 590 580 ELEVATION IN FEET M.S.L. 540 530 520 0+00 2+00 4+00 6+00 8100 10+00 12+00 14+00

NOTES:

I. THICKNESS OF OVERBURDEN PENETRATED BY OFFSET BORINGS BAGC-10 AND BAGC-12 IS ADJUSTED TO THE GROUND SURFACE IN THE LINE OF SECTION.

2. SEE SEQ. 102 FOR THE BORING LAYOUT AND SEQ. 104 FOR LITHOLOGIC SYMBOLS.

2

С

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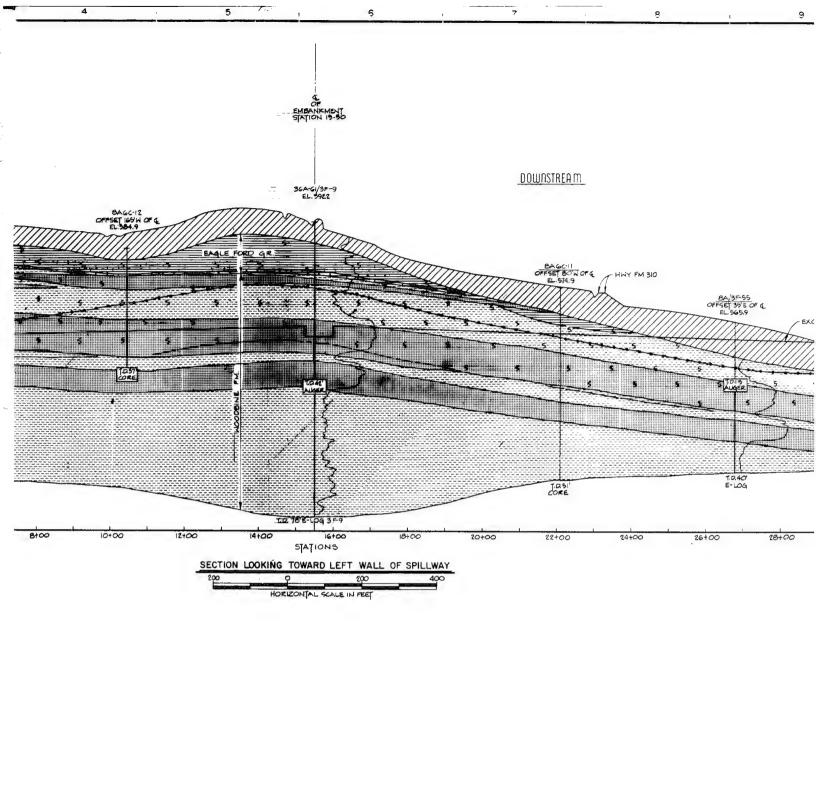
3

4

.

5

SECTION LOOKING



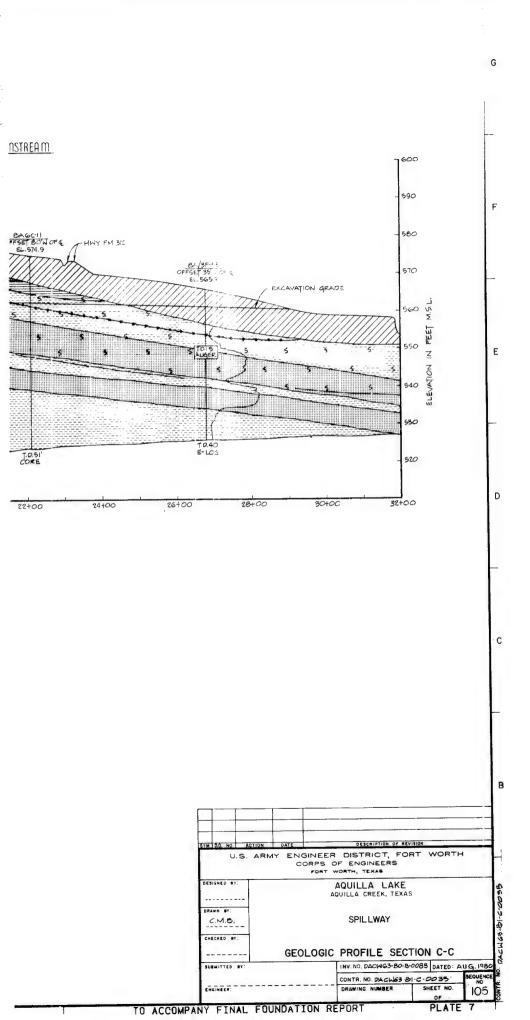
C.M.5, G

4

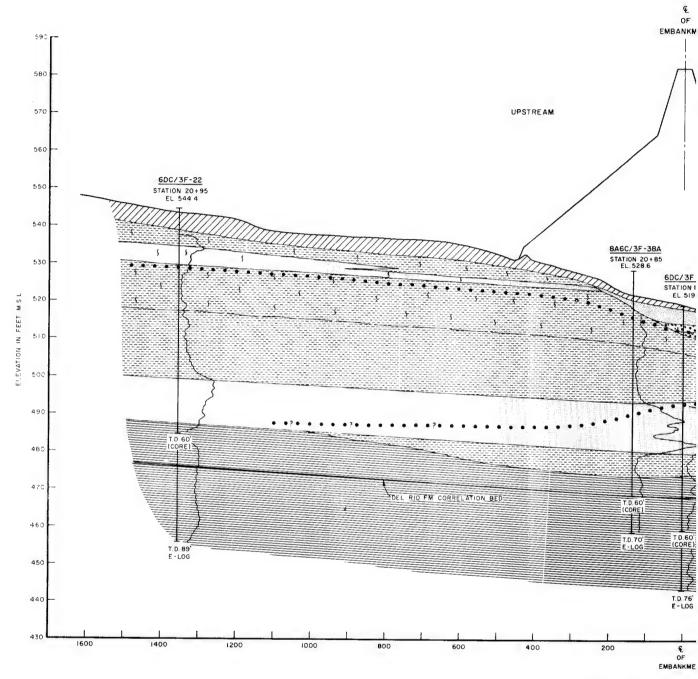
5

7

TO ACCOMPANY FINAL FOUNDA



B



DISTANCE FROM EMBANK

IN FEE

(I.) PRIMARY STRATA SHOWN AT BORING 8AGC/3F-29 ARE DISPLACED DOWNWARD 3 FEET FROM THEIR ELEVATION IN THE BORING AS COMPENSATION FOR FORMATIONAL DIP. OVERBURDEN THICKNESS, AS SHOWN AT THIS BORING, IS ESTIMATED.

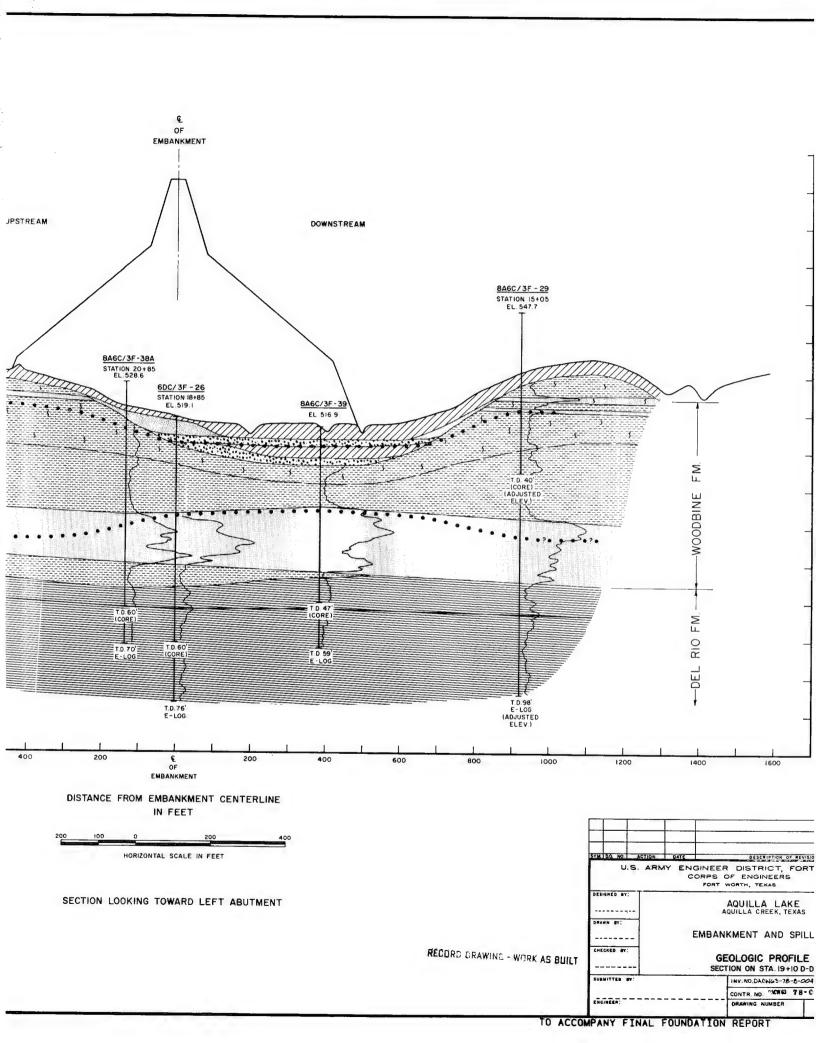
(2) PRIMARY STRATA IN BORING GDC 3F-22 AND BAGC 3F-38A ARE AT APPROXIMATELY THE SAME ELEVATION IN THE LINE OF SECTION.

(3) SEE SEQ. 89 FOR THE BORING LAYOUT AND SEQ. 91 FOR LITHOLOGIC SYMBOLS.

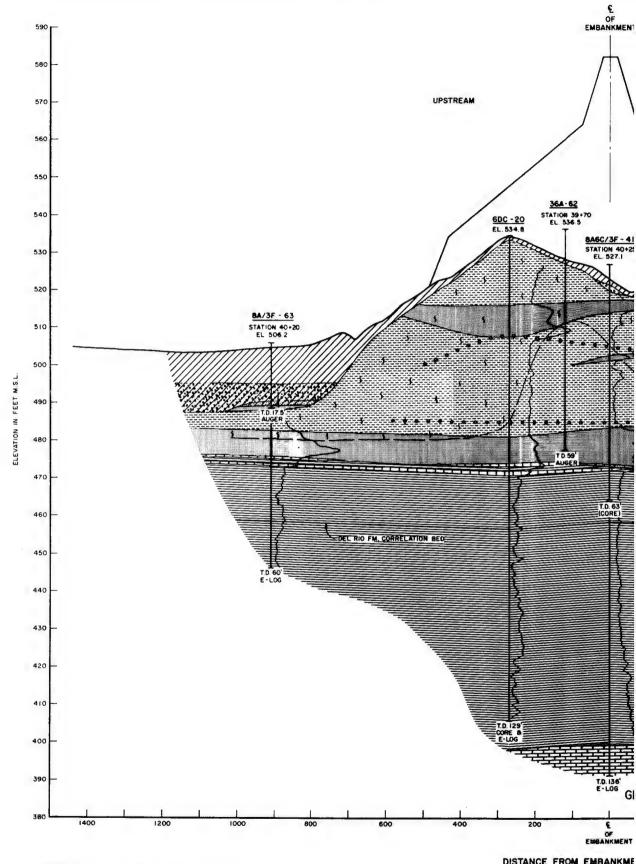
NOTES:

HORIZONTAL SCALI

SECTION LOOKING TOWAR



TO ACCOMPANY FINAL FOUNDATION REPORT



NOTES:

NOTES:

1. OVERBURDEN THICKNESS IS ESTIMATED FOR BORINGS
AT ELEVATIONS ABOVE THE PROFILE.

2. DEPTH OF WEATHERING IN THE WOODBINE FORMATION
IS ESTIMATED DOWNSTREAM FROM BORING BAGC/3F-41.

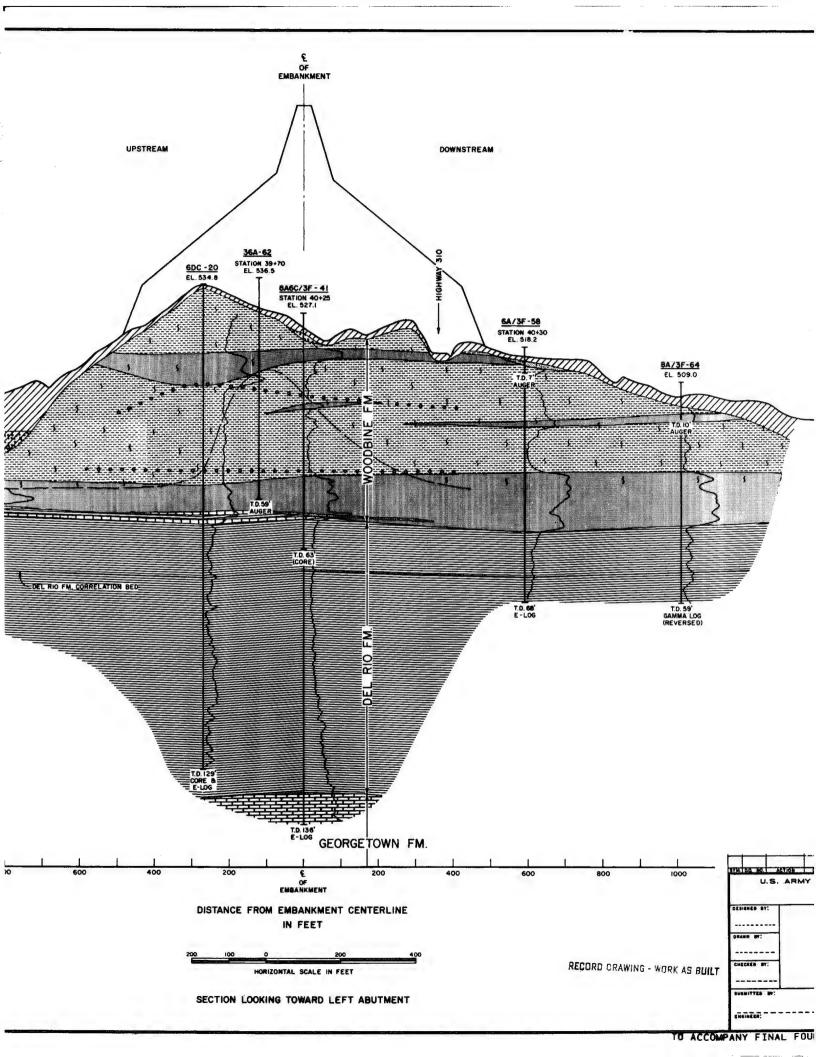
3. SEE SEQ. 89 FOR THE BORING LAYOUT AND SEQ. 91 FOR
LITHOLOGIC SYMBOLS.

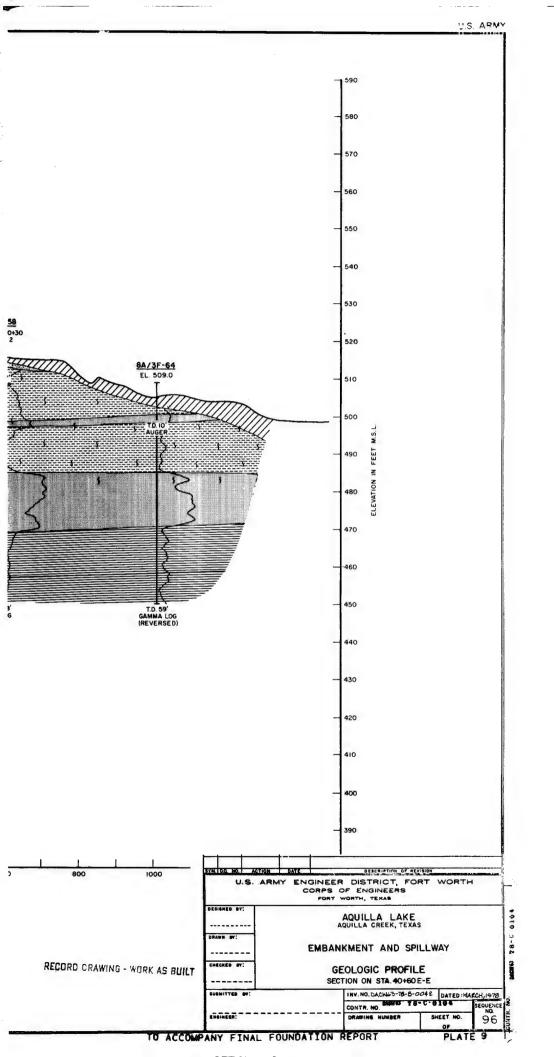
DISTANCE FROM EMBANKME

IN FEET



SECTION LOOKING TOWARD





NOTES

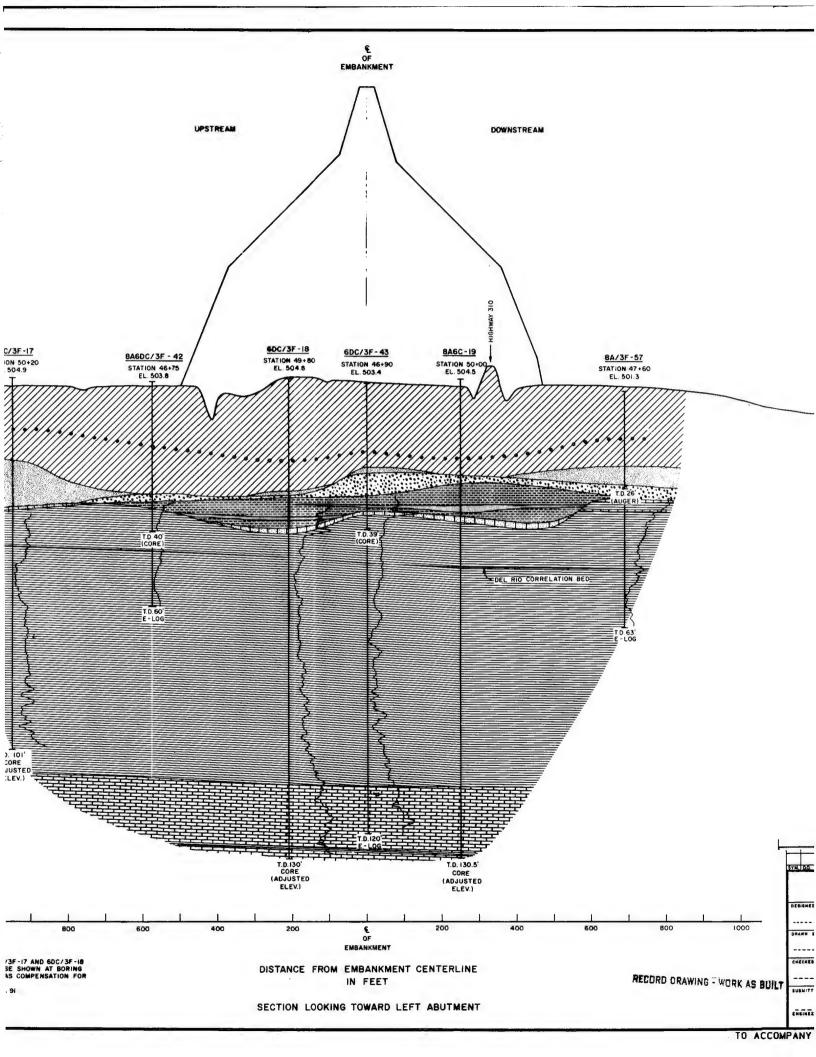
1. PRIMARY STRATA SHOWN AT BORINGS 8A6C/3F-17 AND 6DC/3F-18
ARE DISPLACED UPWARD 2 FEET AND THOSE SHOWN AT BORING
8A6C-19 ARE DISPLACED UPWARD 3 FEET AS COMPENSATION FOR
FORMATIONAL DIP.

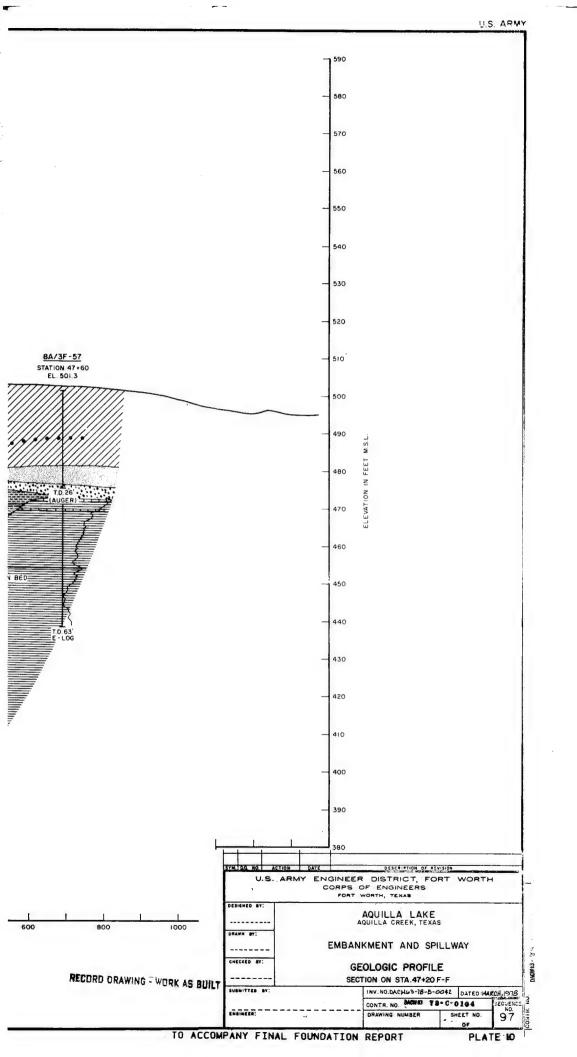
2. SEE SEC. 89 FOR THE BORING LAYOUT AND SEC. 91
FOR LITHOLOGIC SYMBOLS.

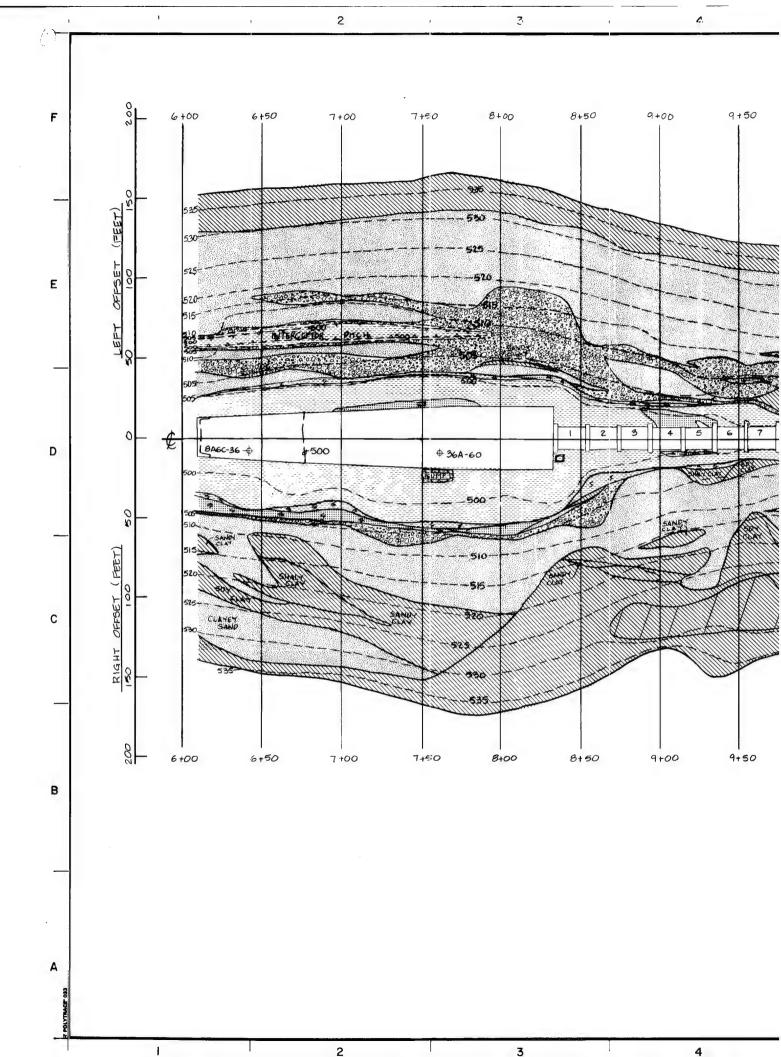
DISTANCE FROM EMBANI

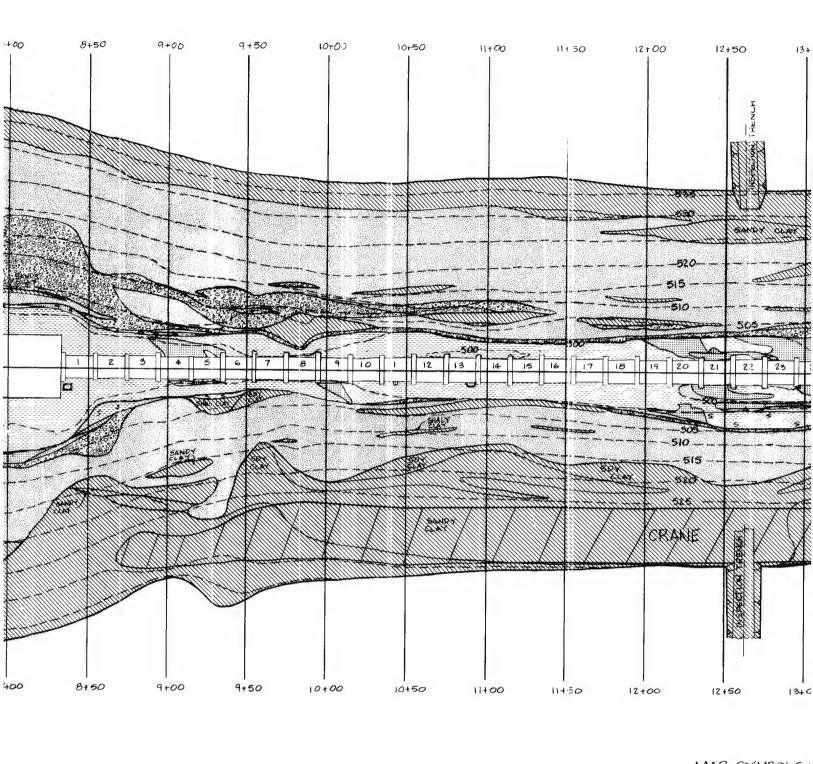
EMBANKME

SECTION LOOKING TOWAR









5

MAP SYMBOLS: STEEPLY DIP

CLAY, SAND SAND, incl.

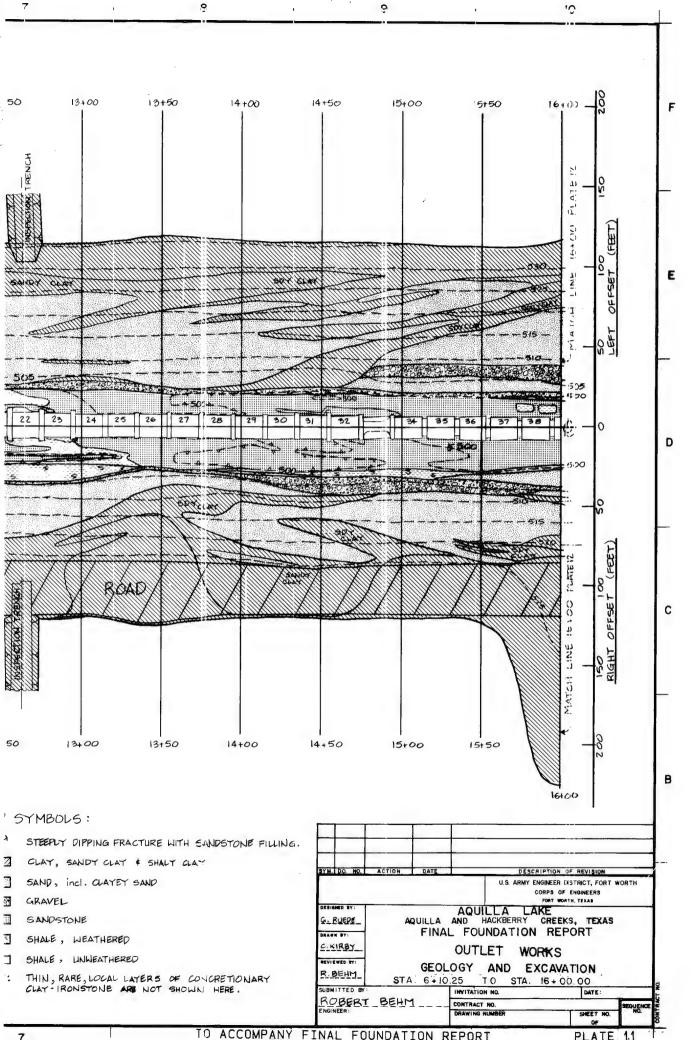
384.58083 GRAVEL SANDSTONE

SHALE, WEA

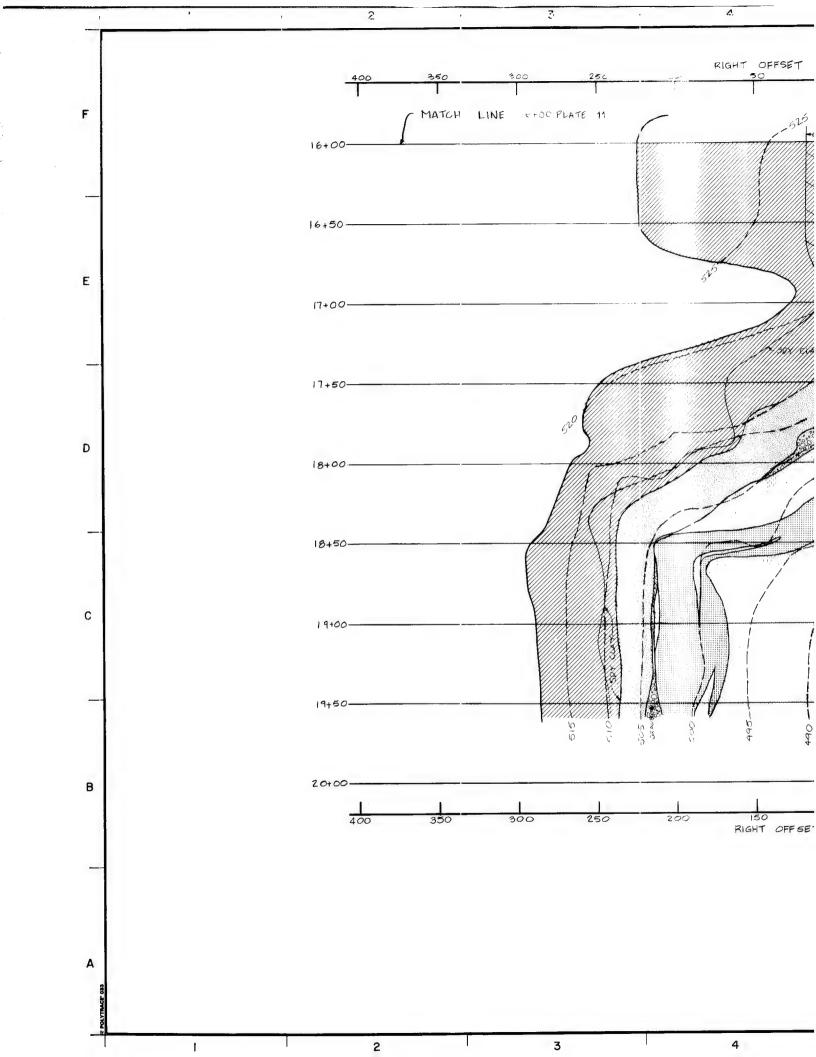
SHALE , LINA THIN, RARE, I NOTE:

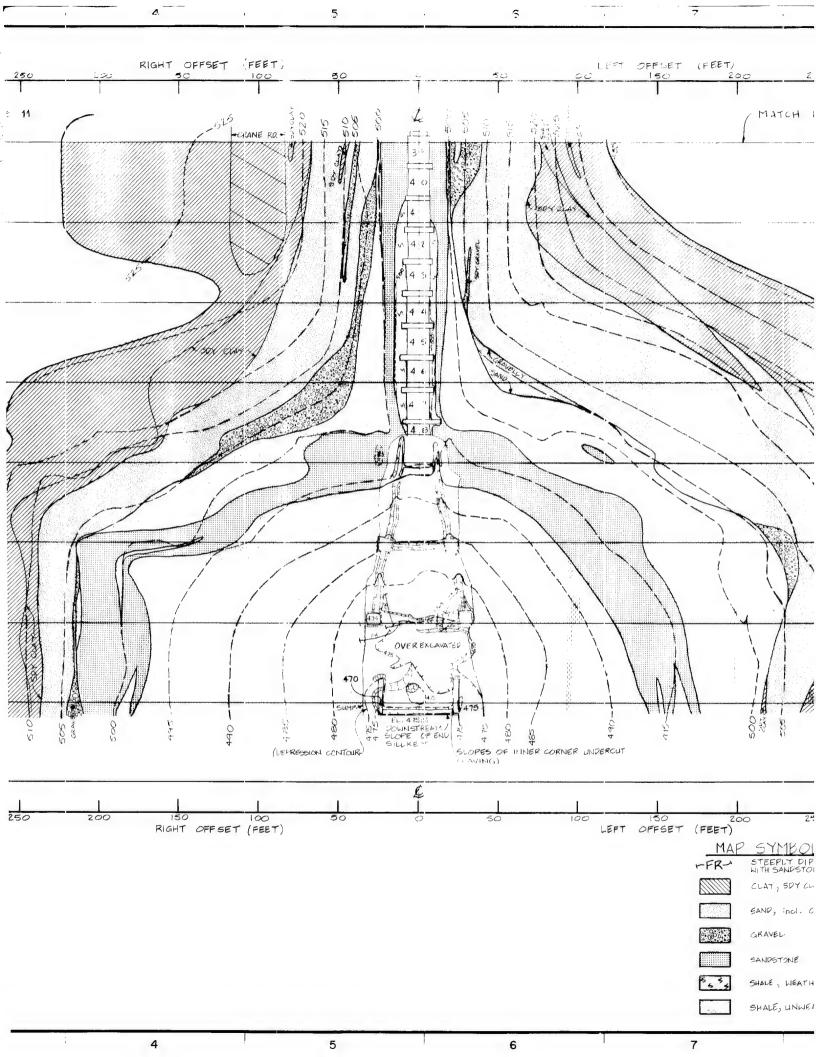
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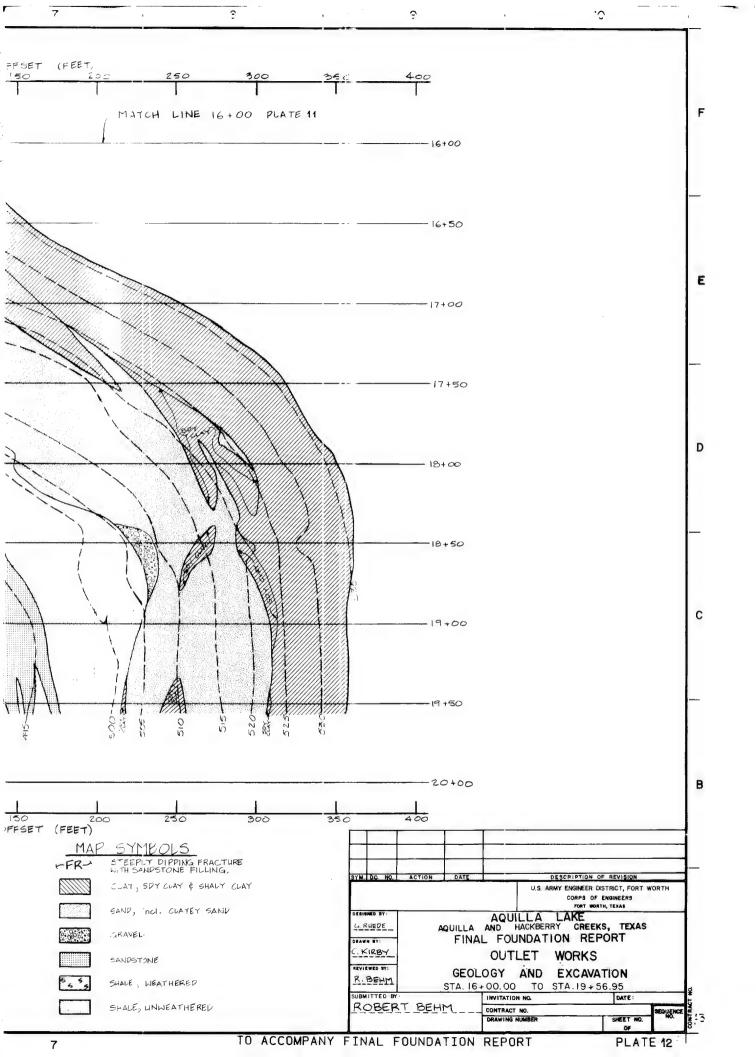
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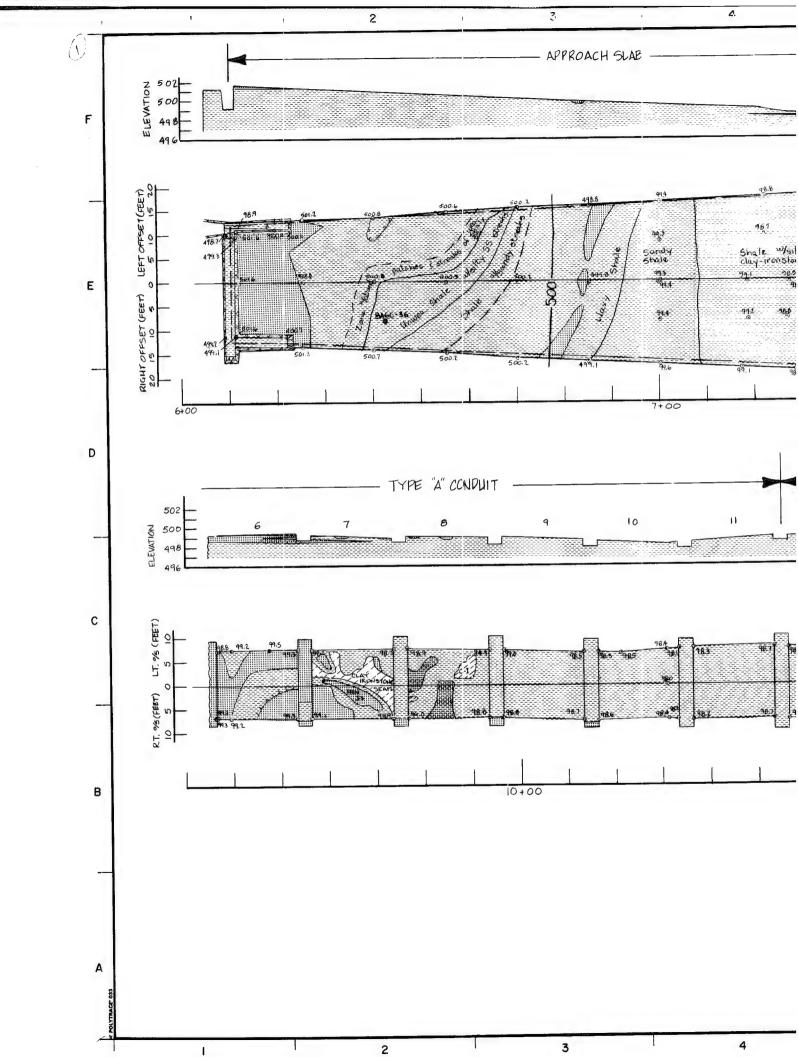


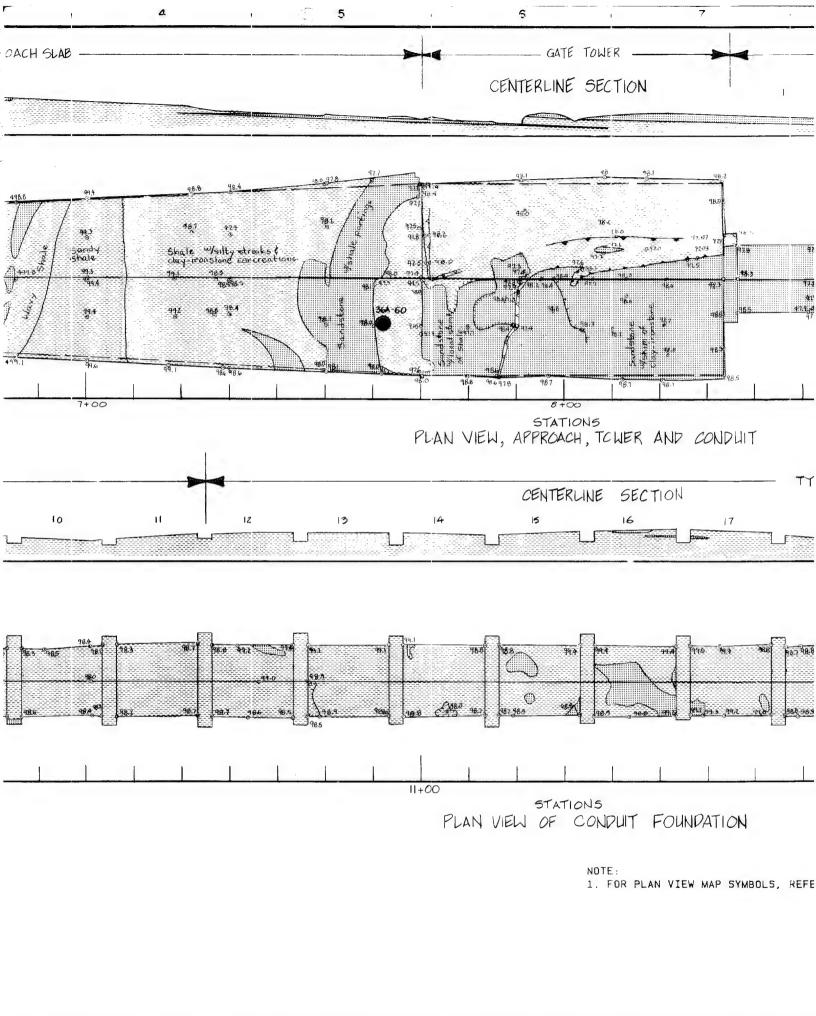
TO ACCOMPANY FINAL FOUNDATION REPORT

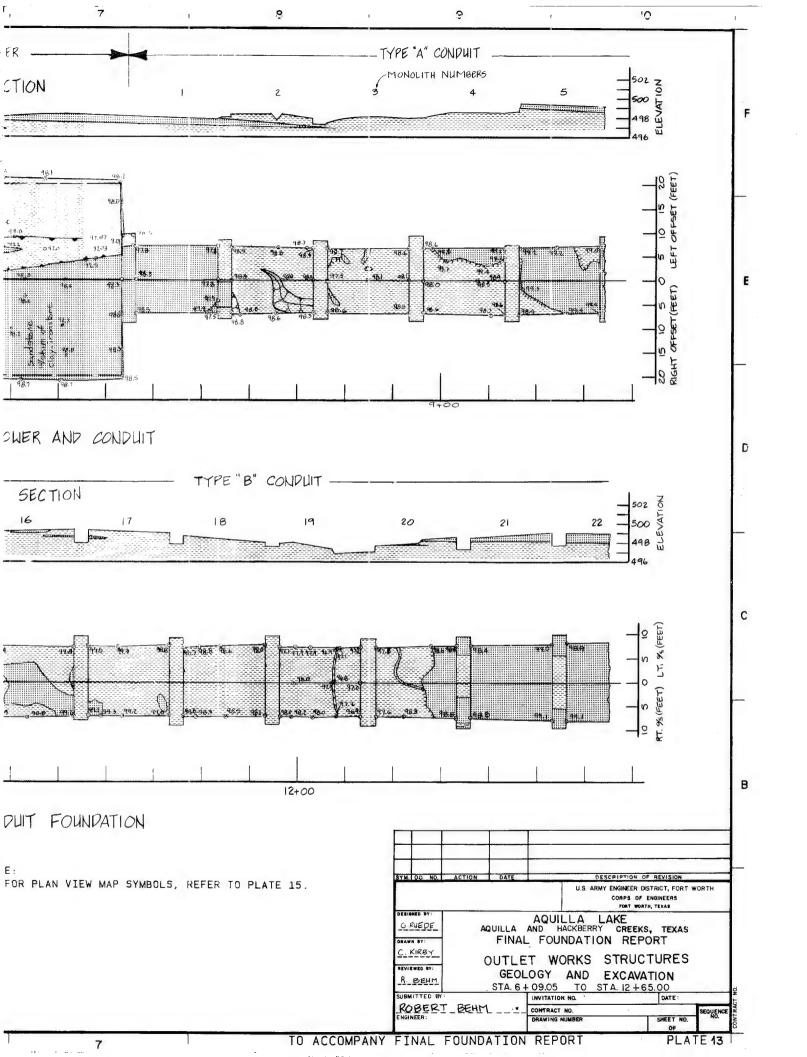


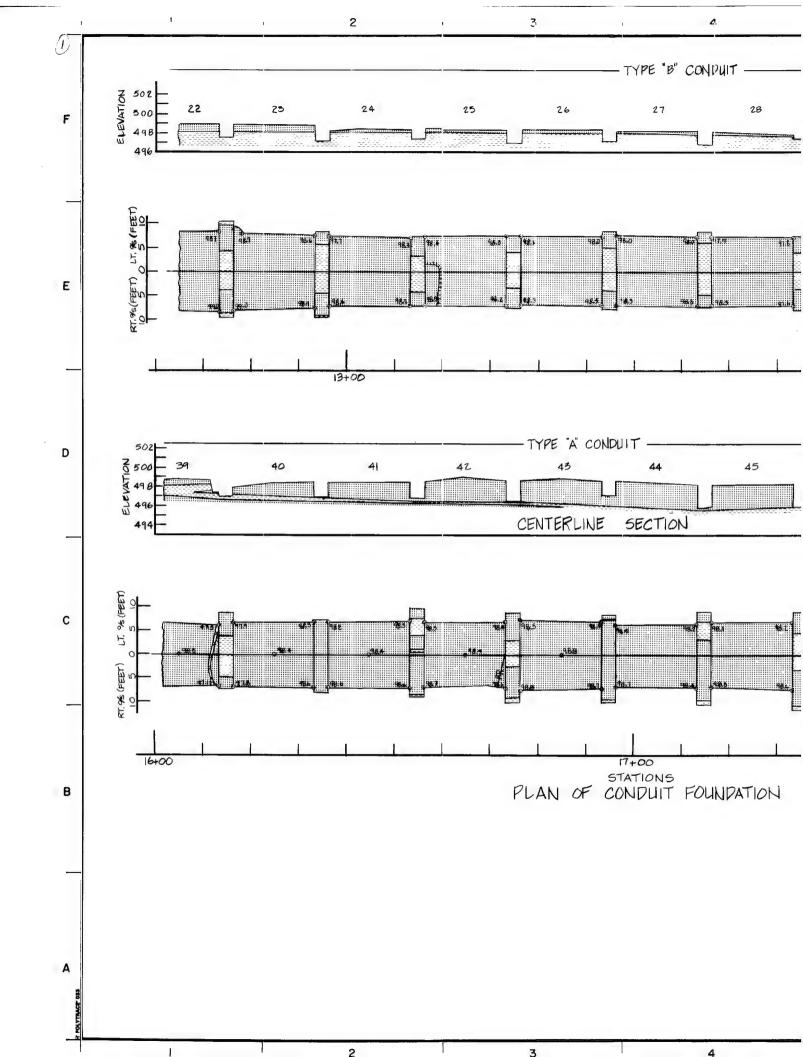


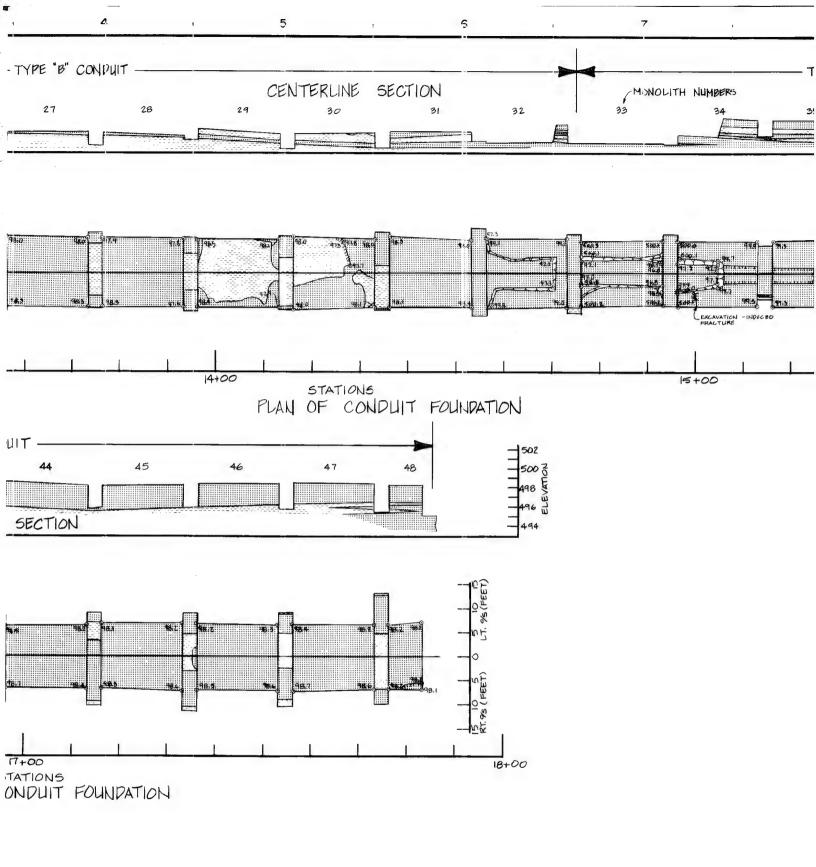




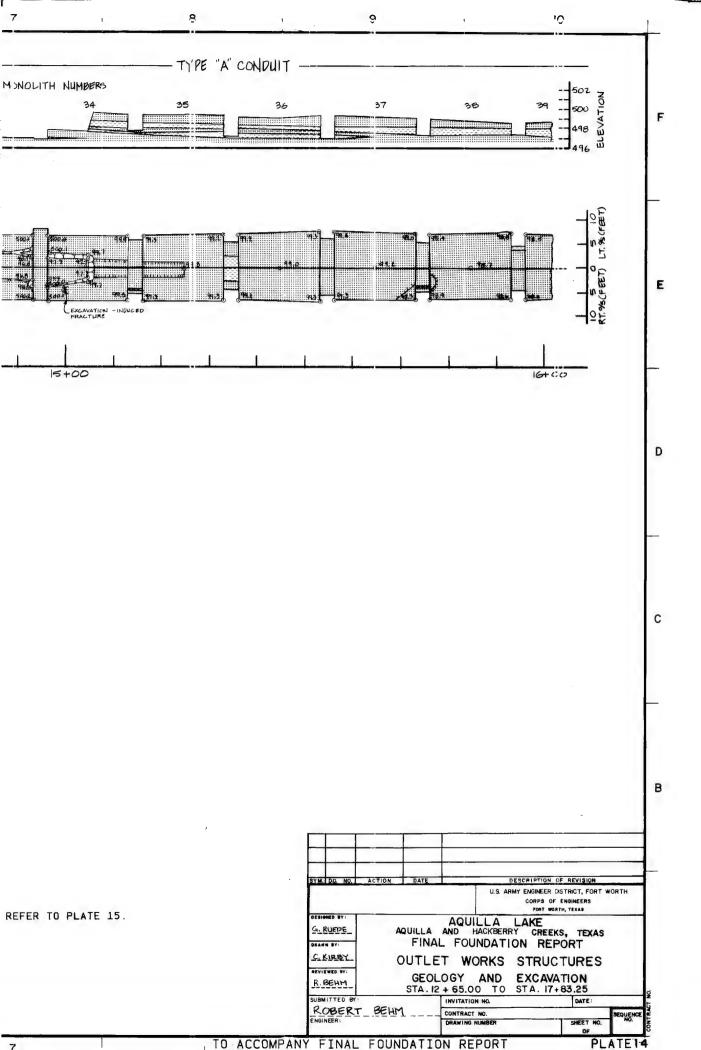




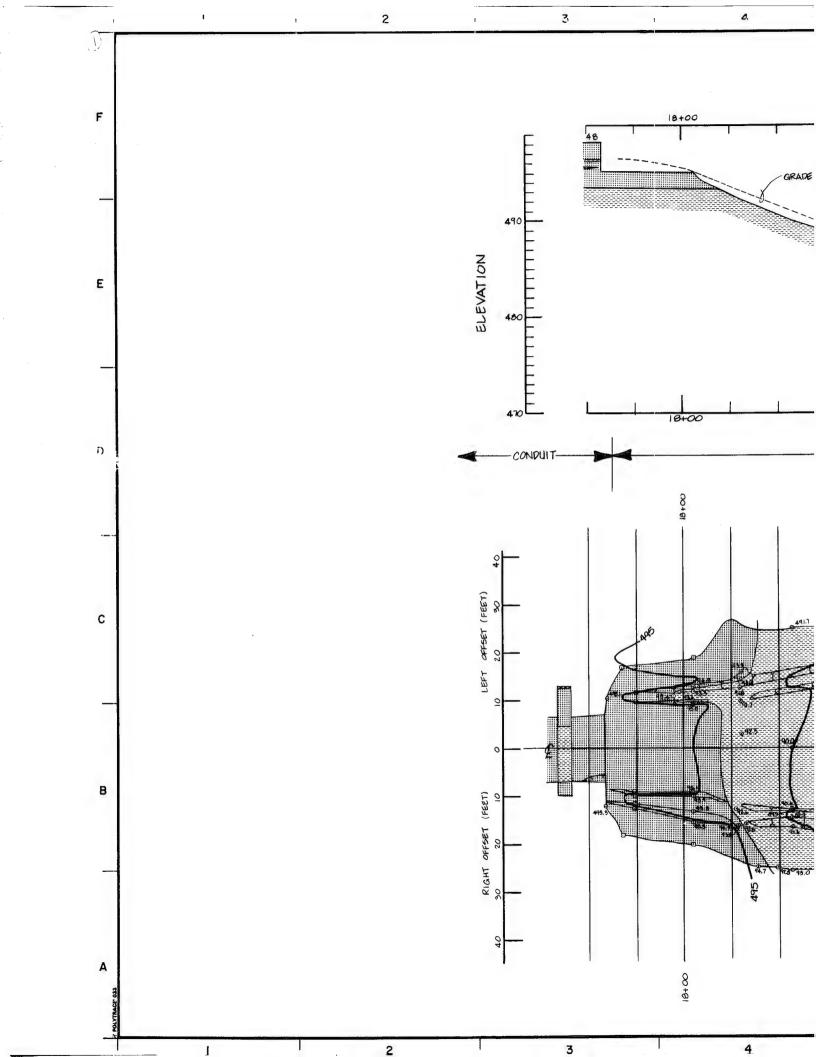


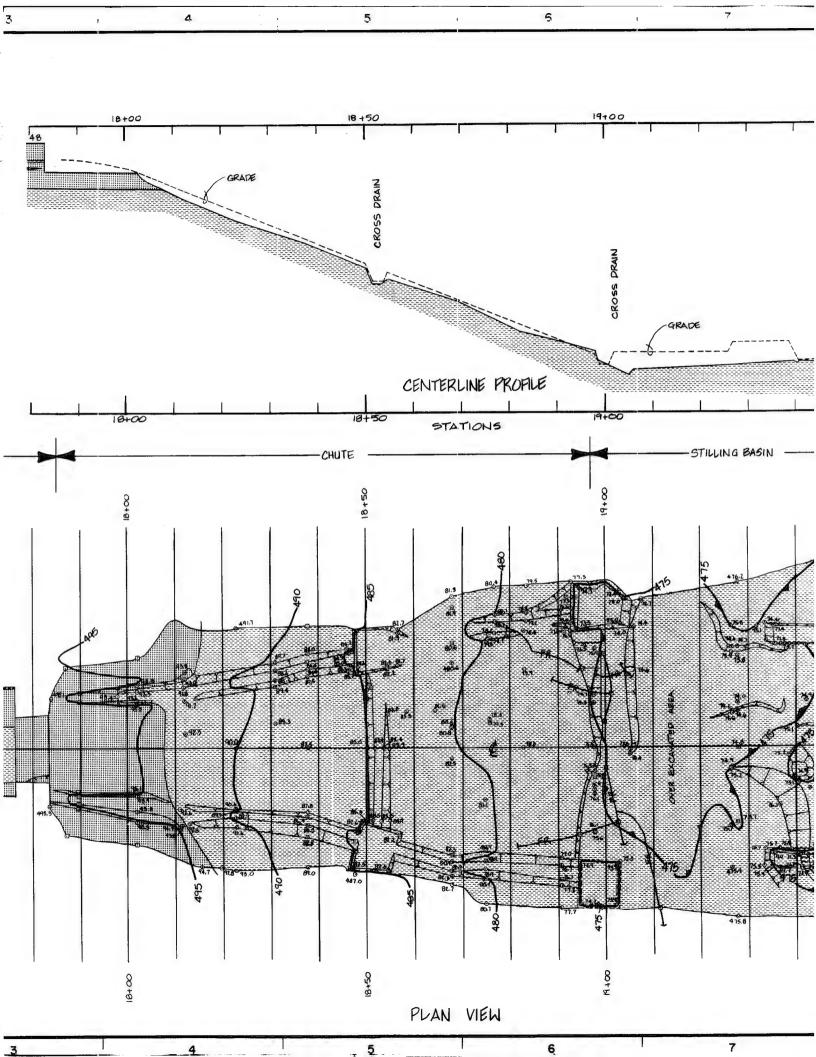


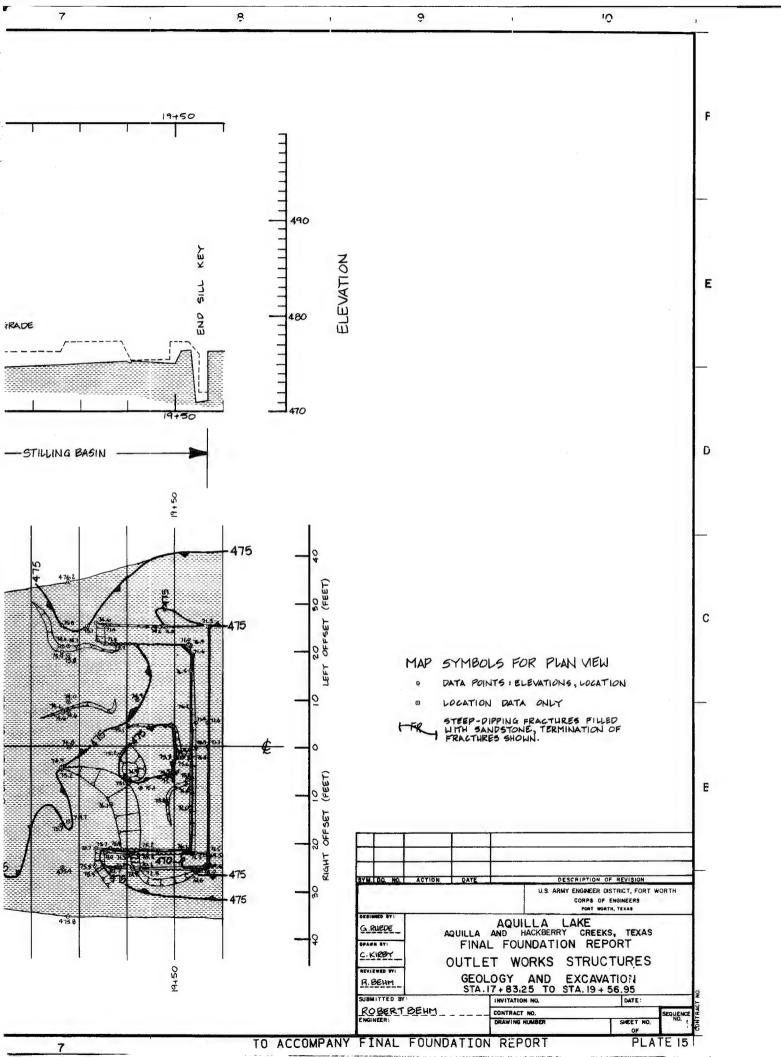
NOTE:
1. FOR PLAN VIEW MAP SYMBOLS, REFER TO PLATE 15.

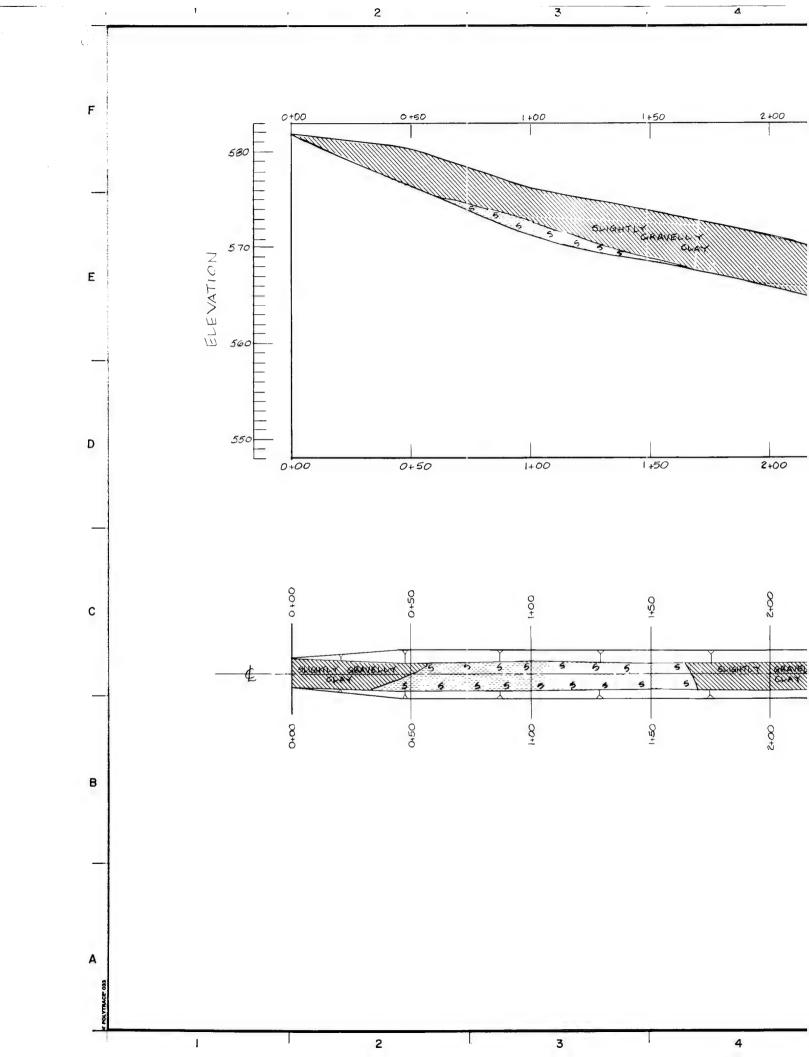


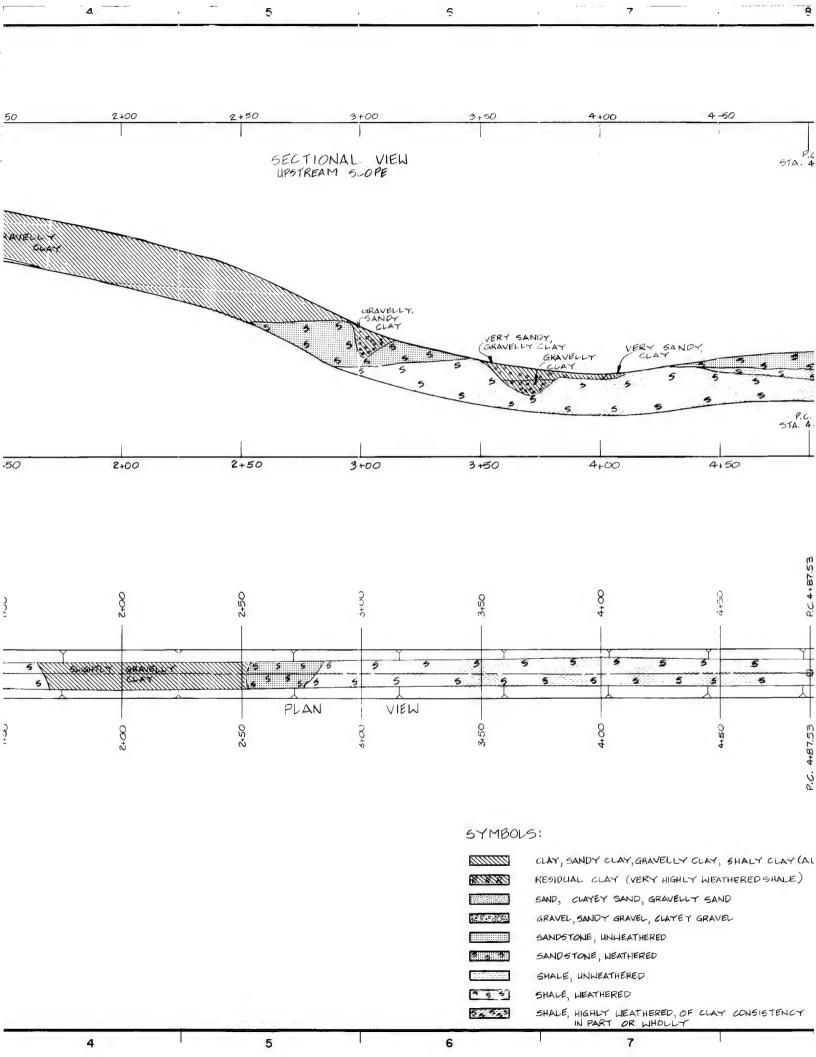
TO ACCOMPANY FINAL FOUNDATION REPORT

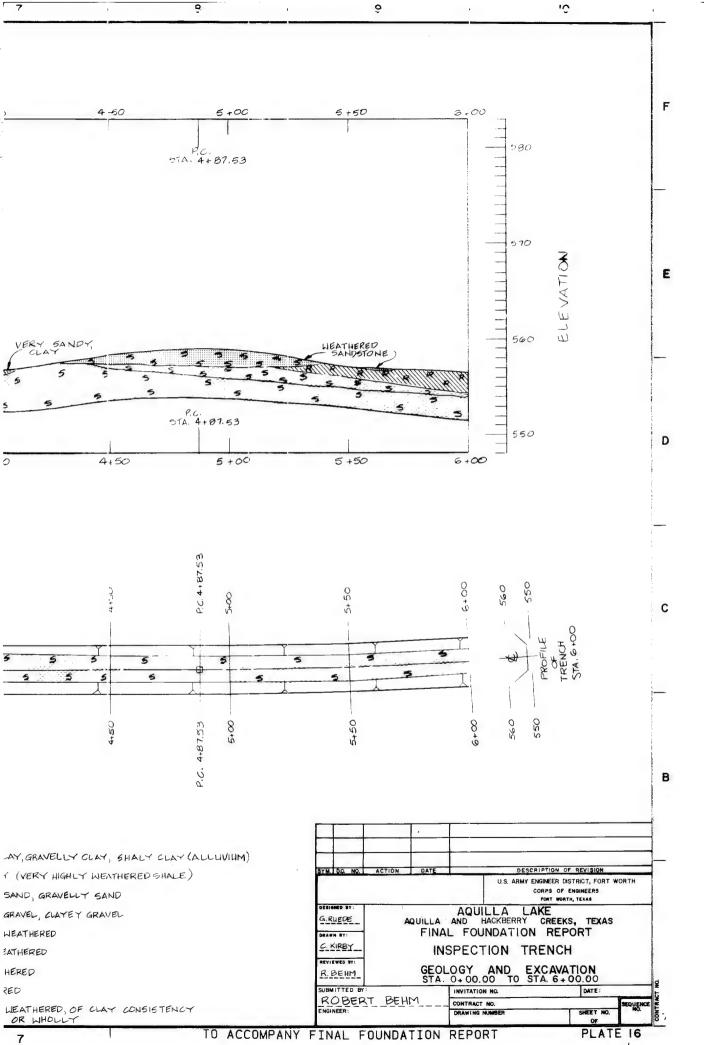


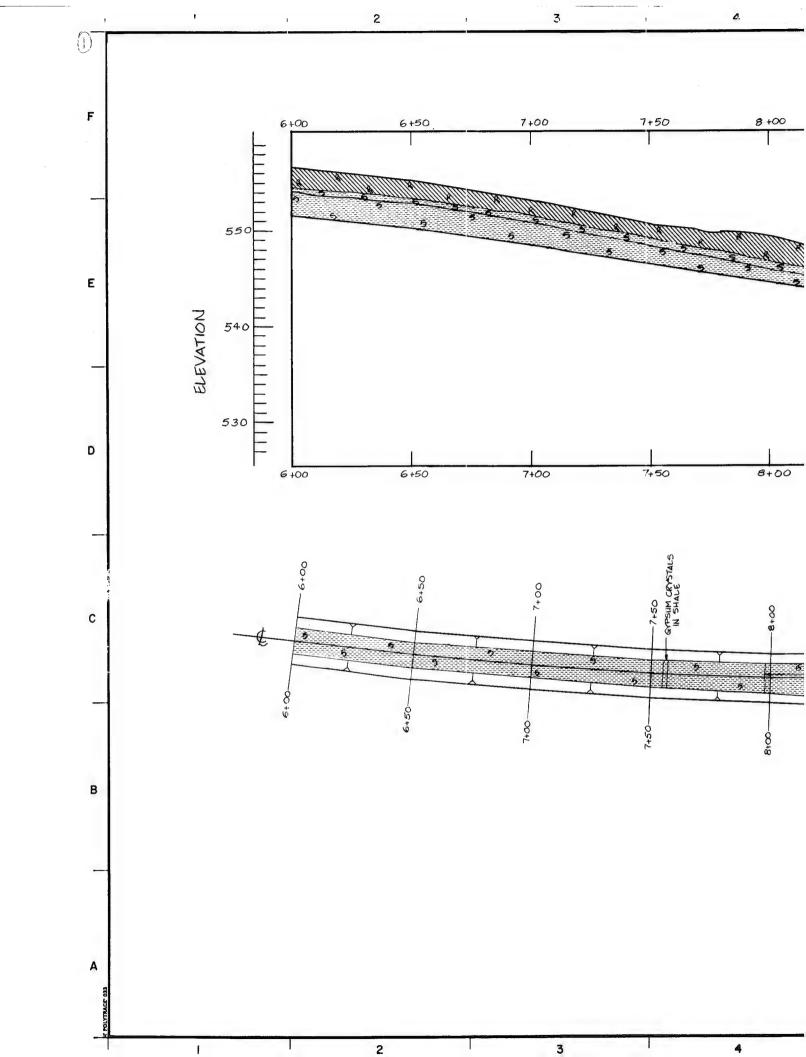


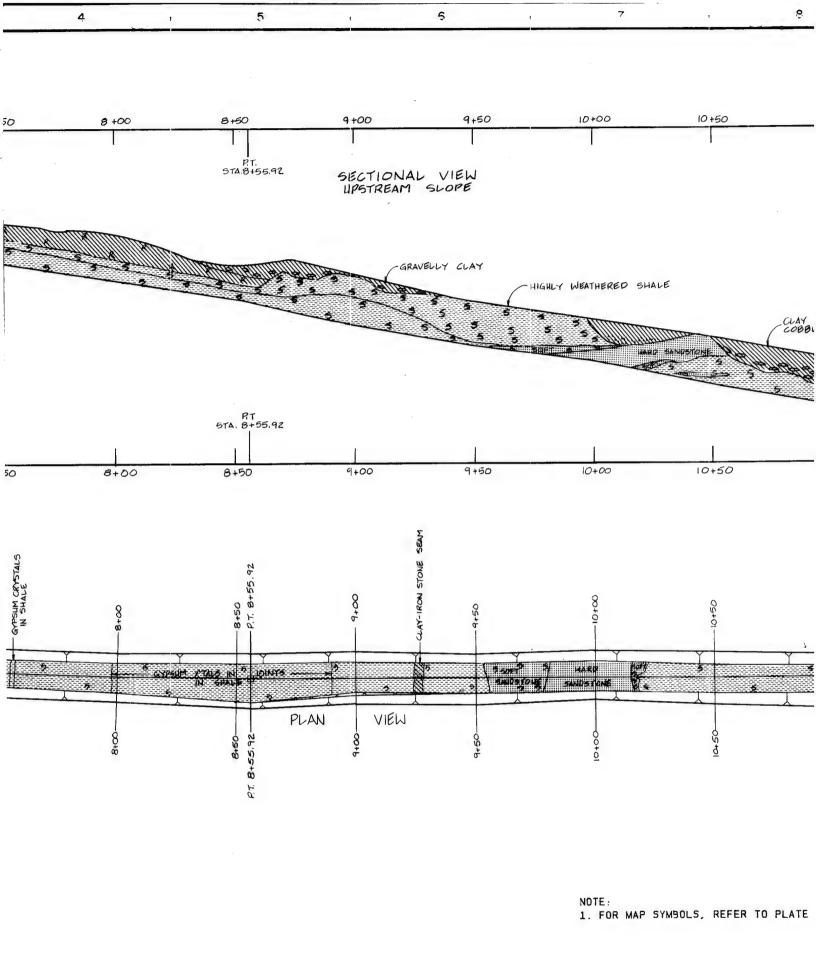


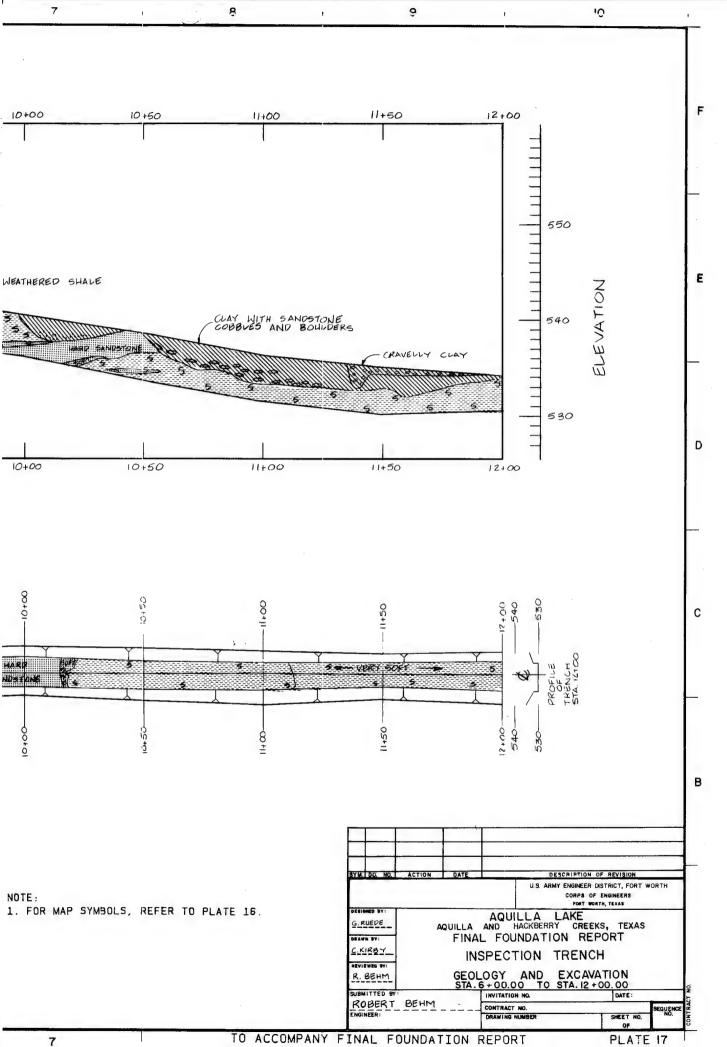


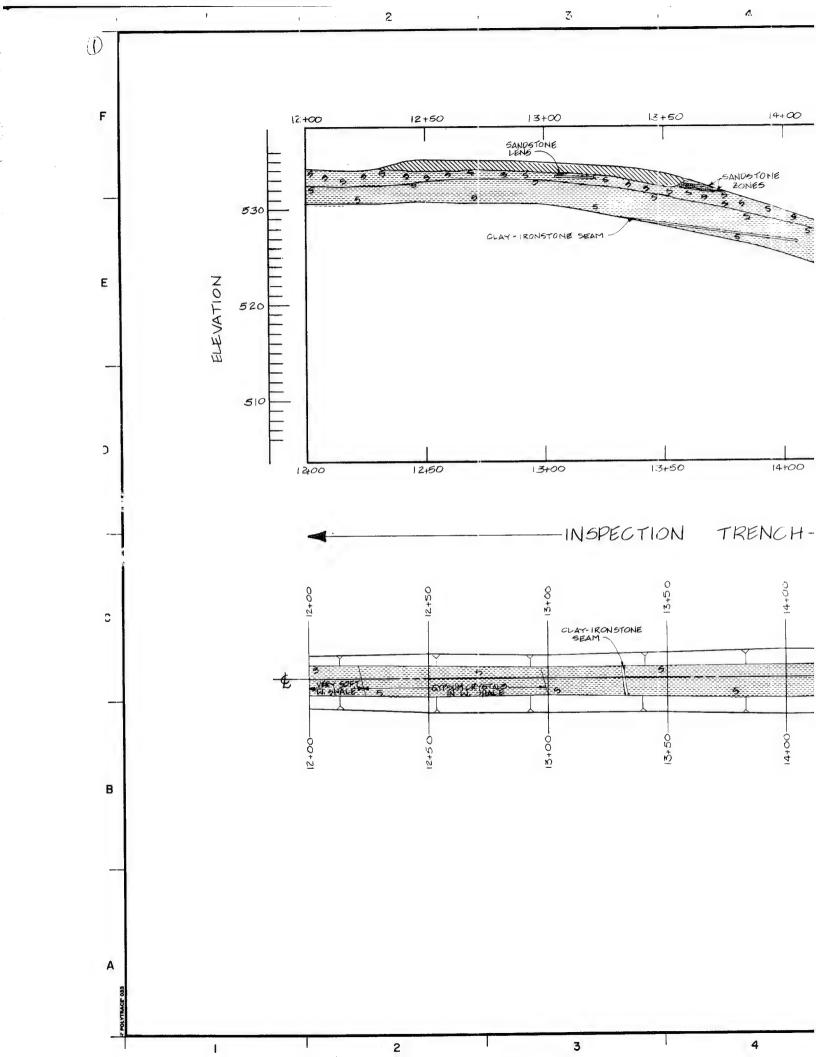


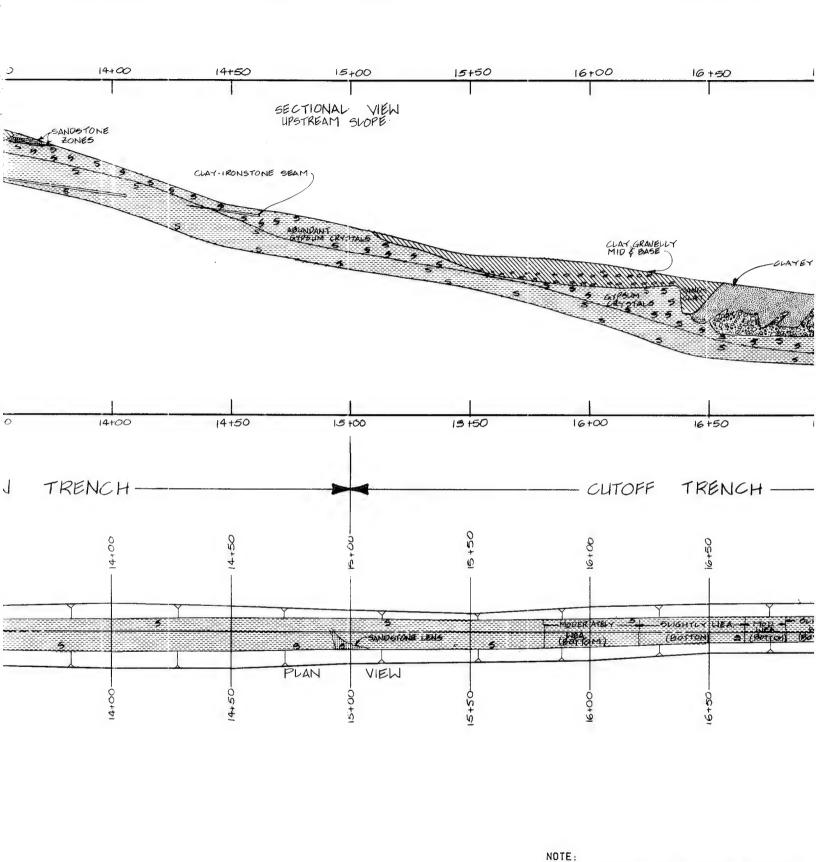






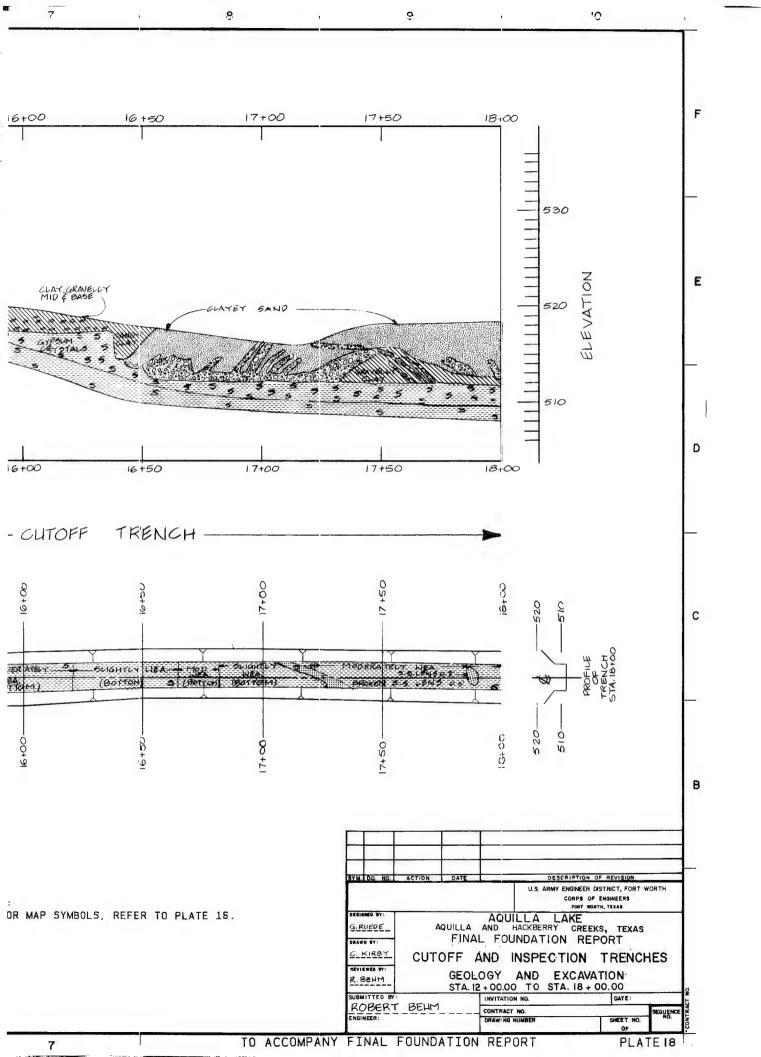


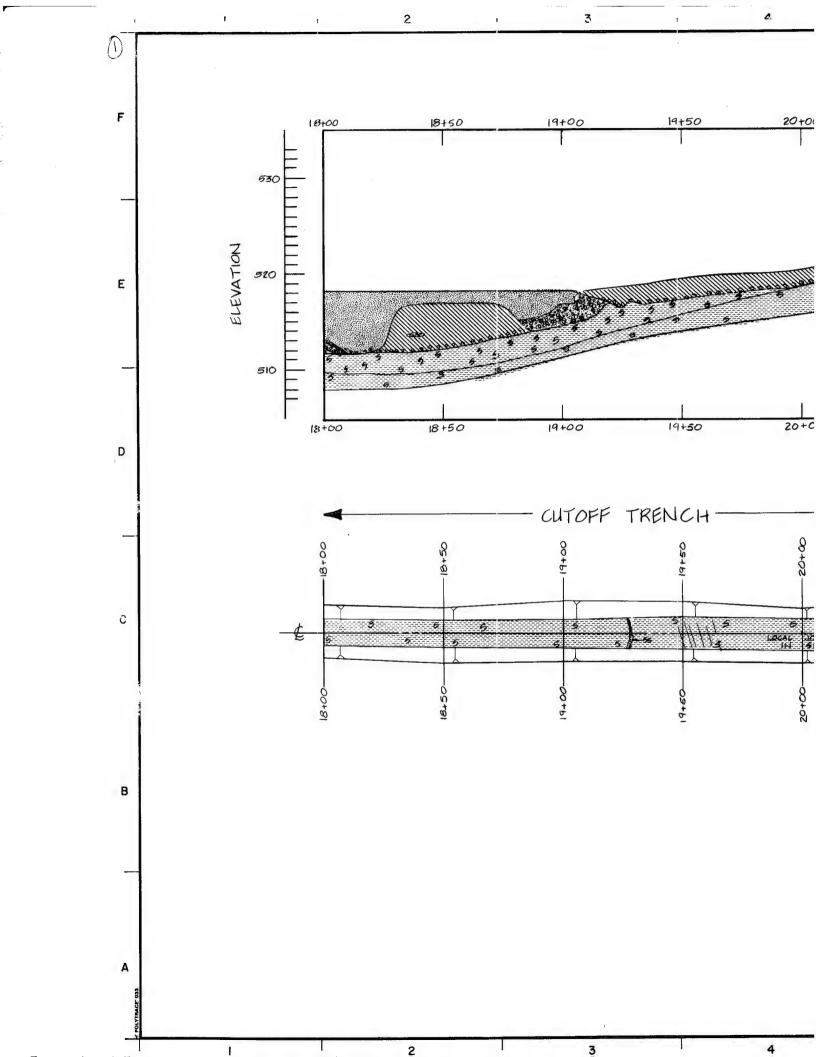


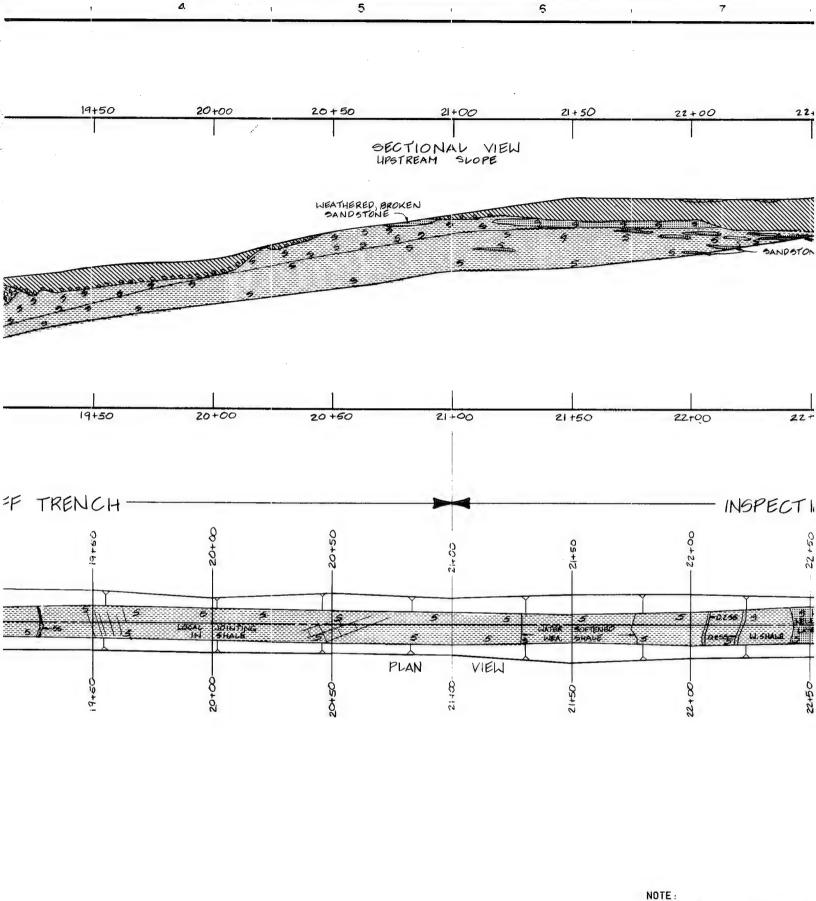


4.

1. FOR MAP SYMBOLS, REFER TO PLATE 15.



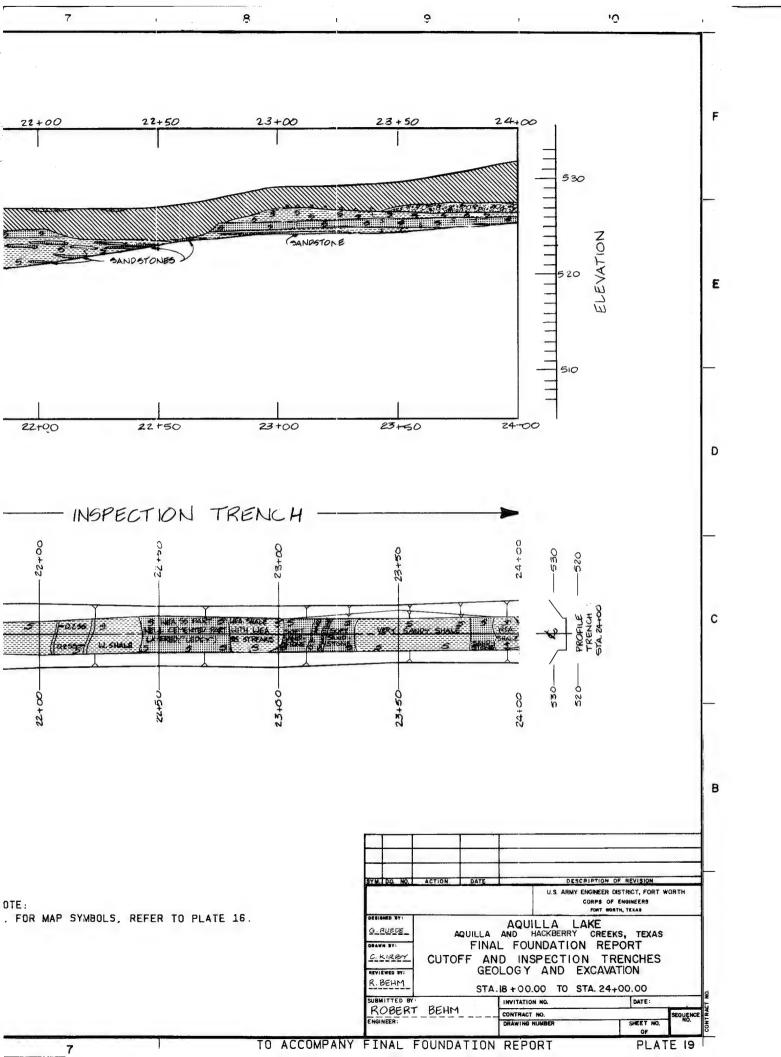


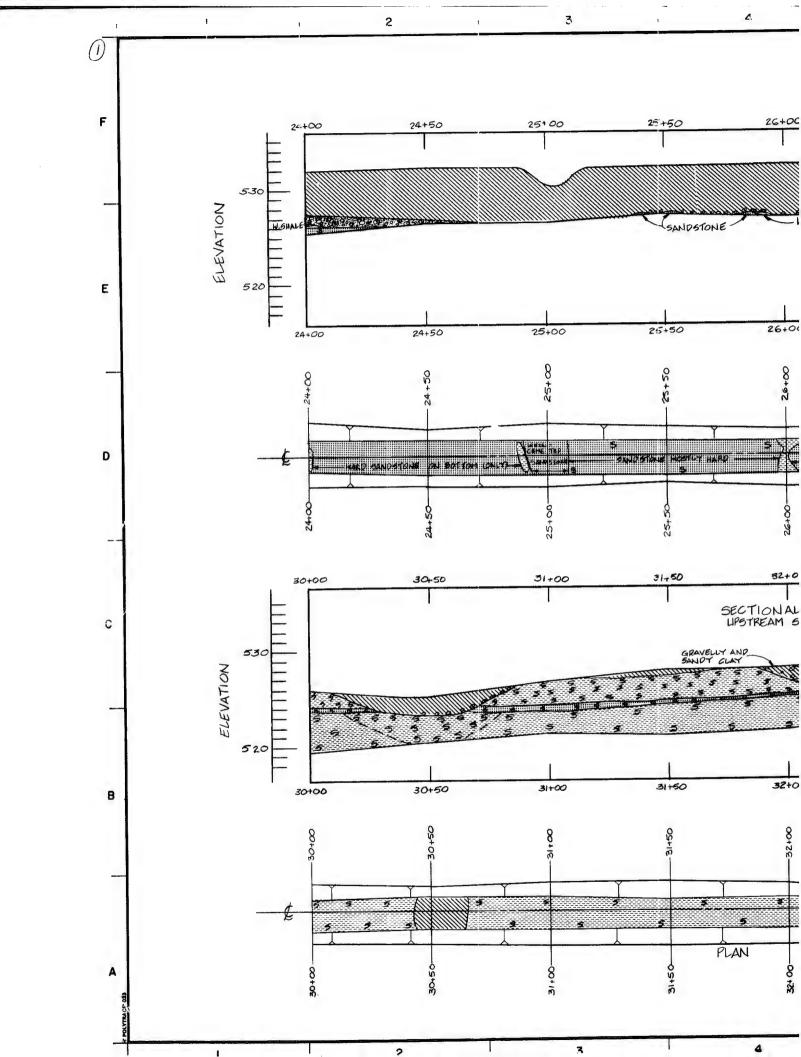


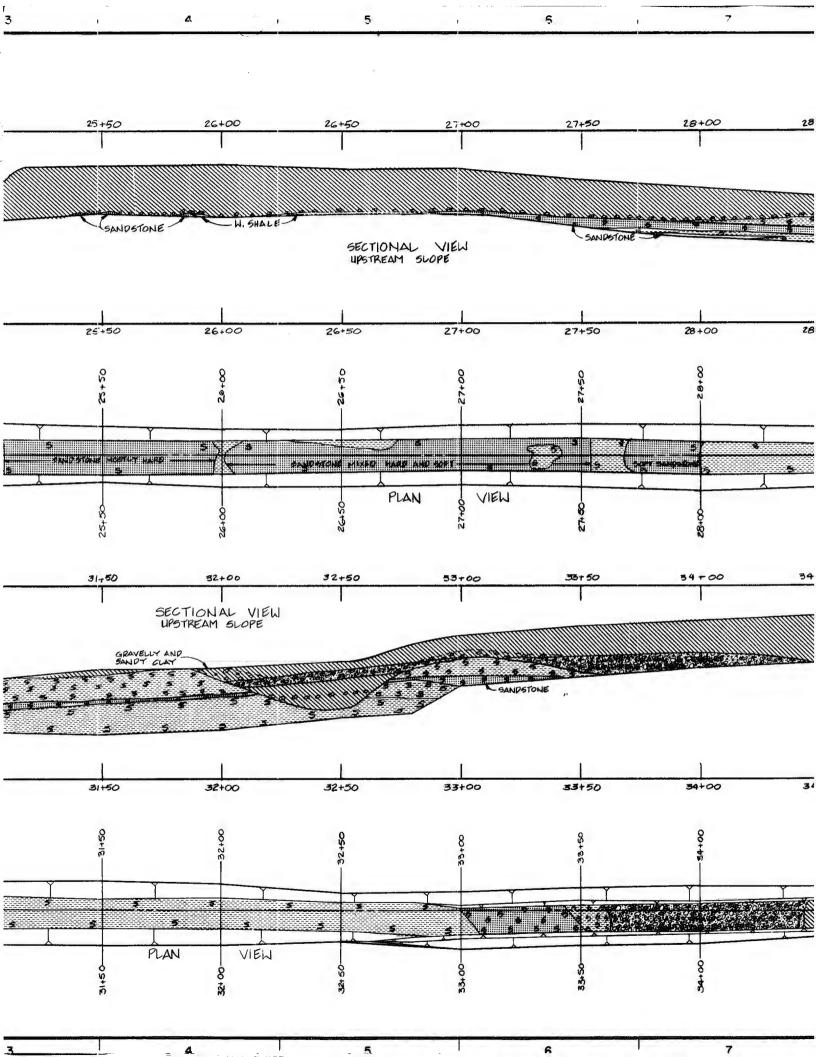
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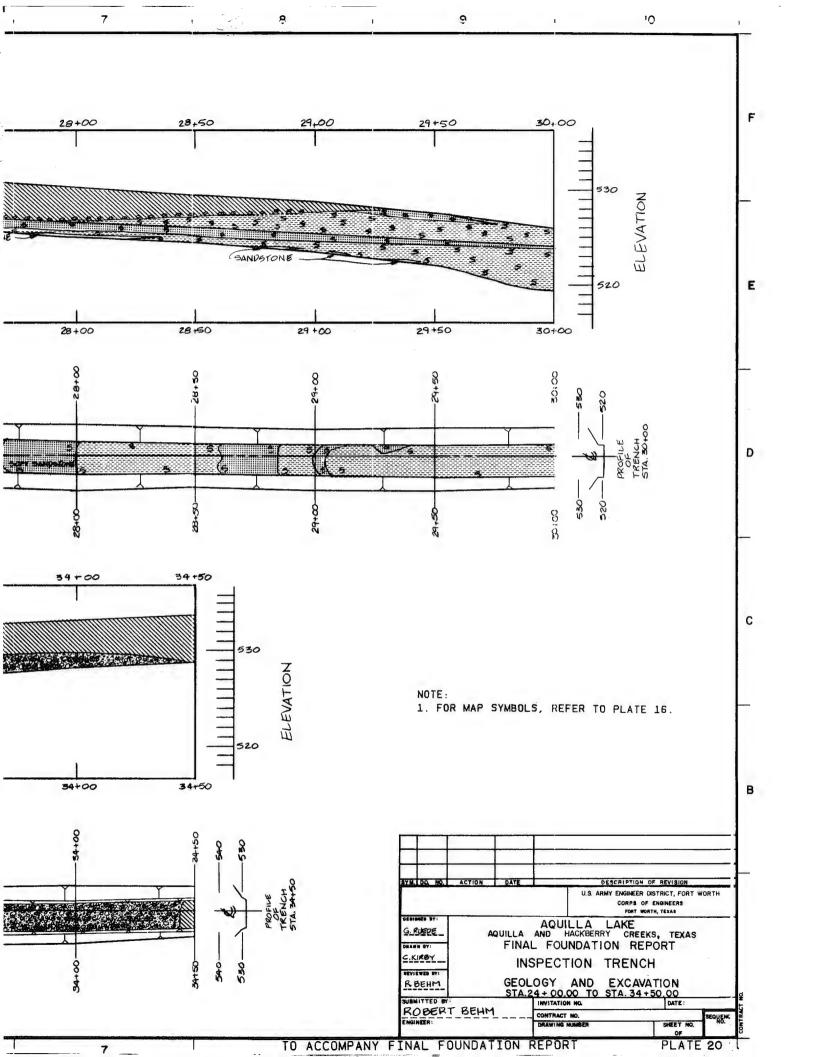
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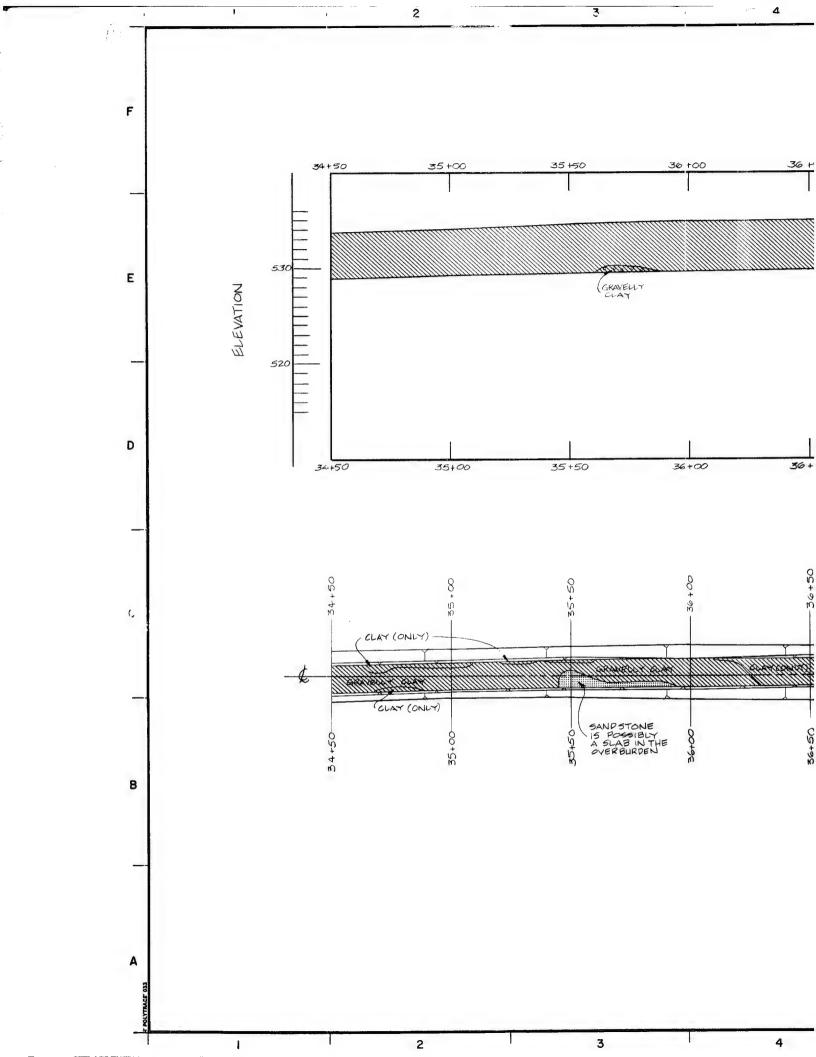
1. FOR MAP SYMBOLS, REFER

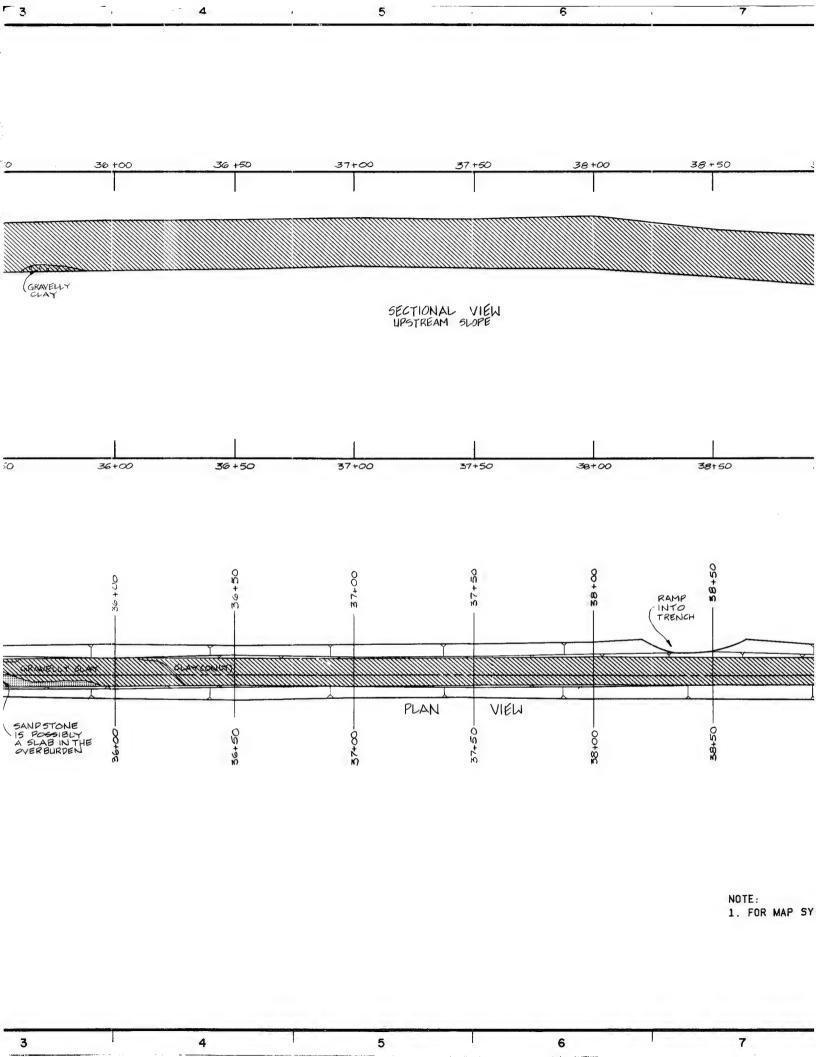


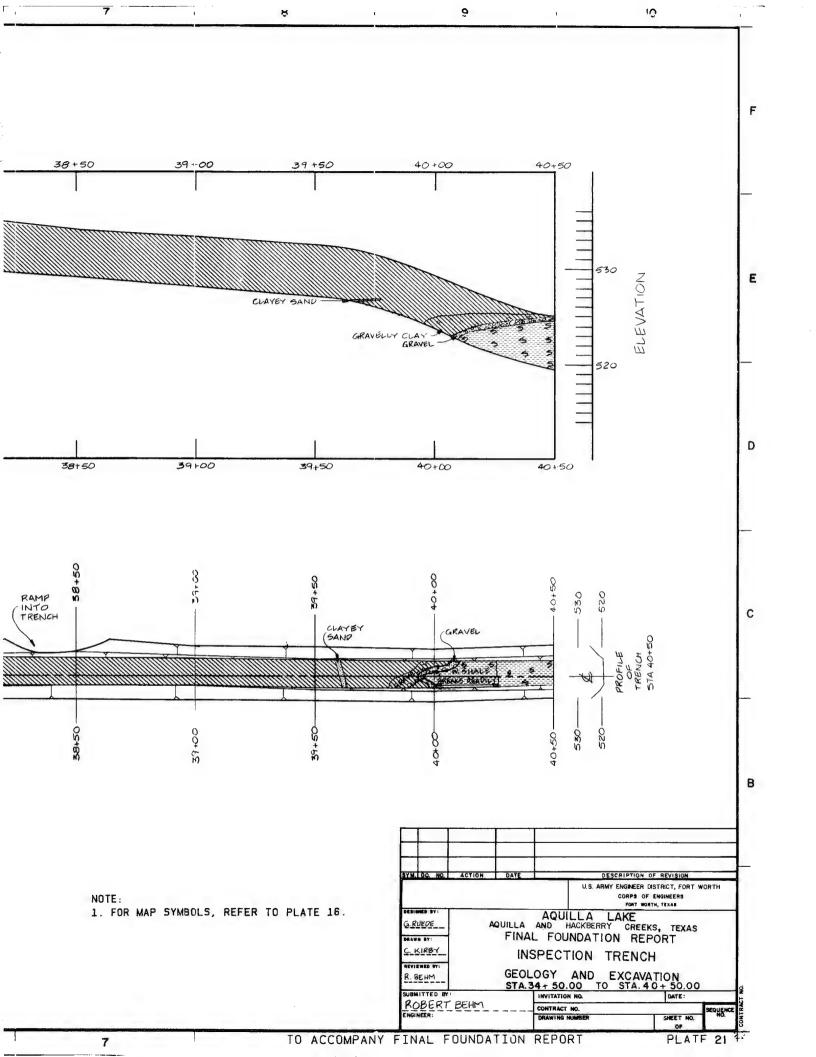


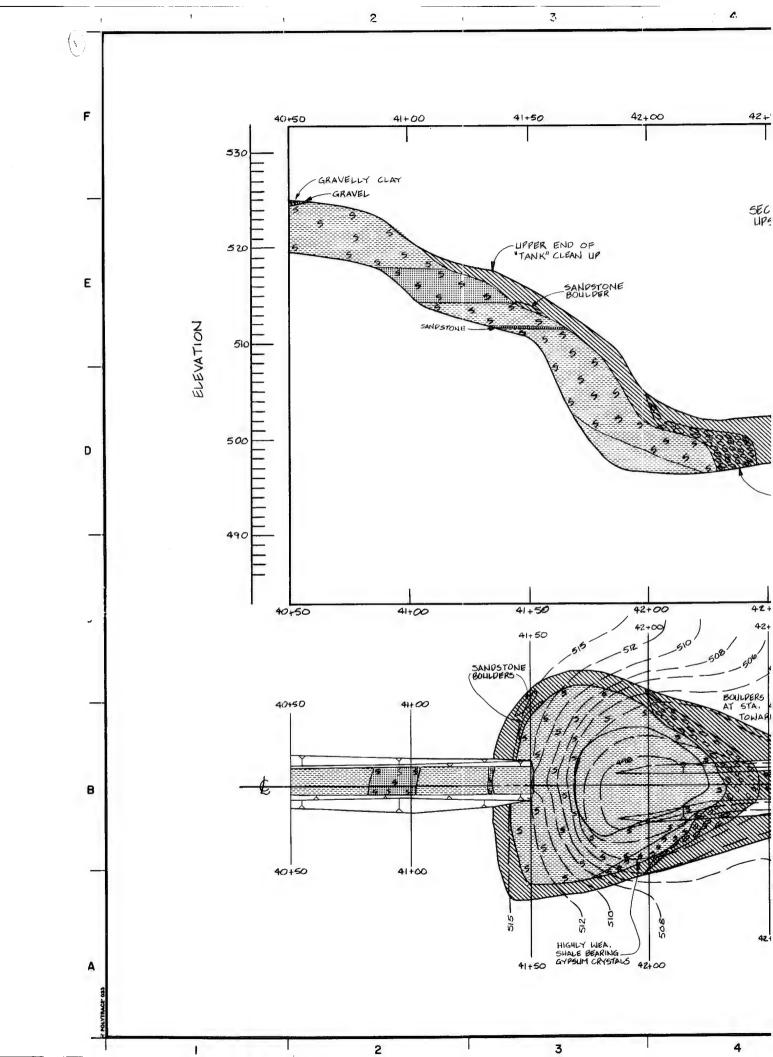


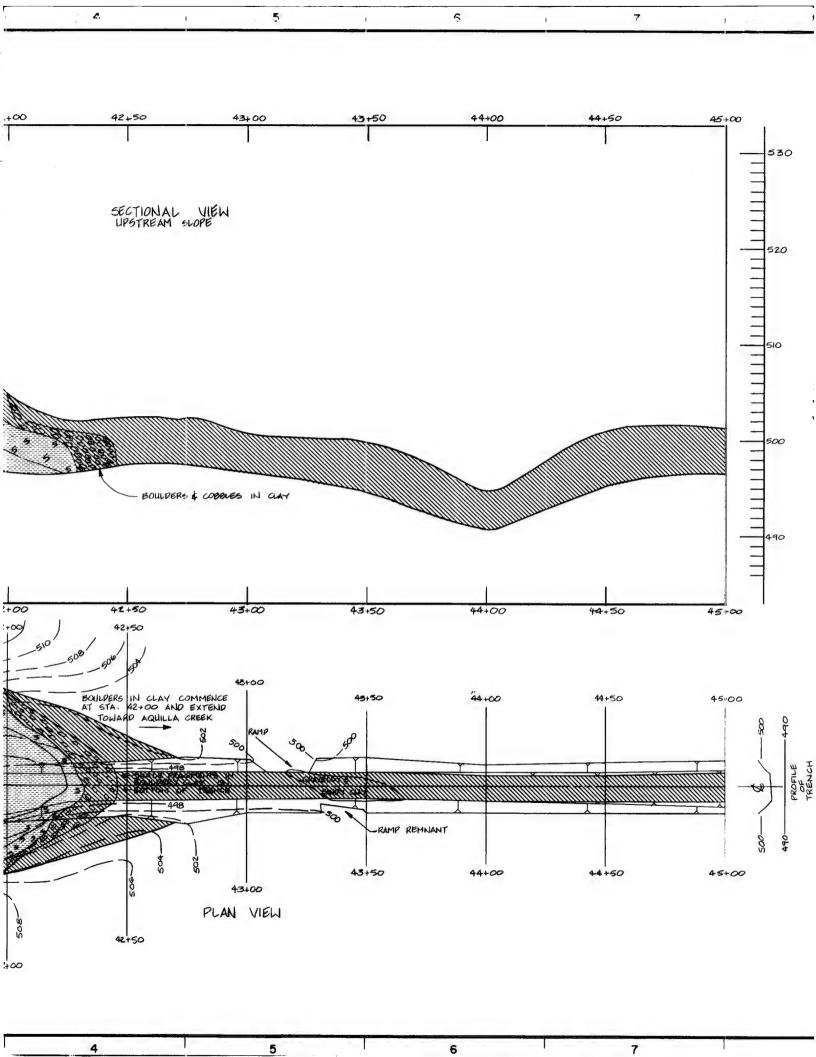


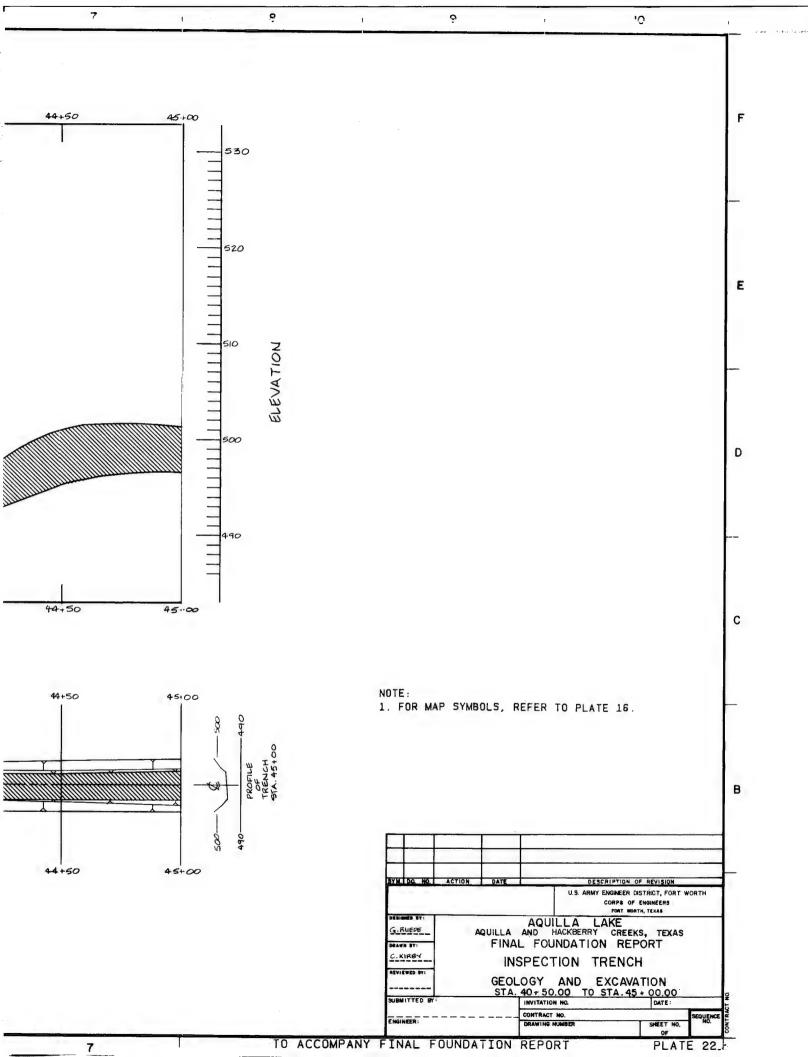


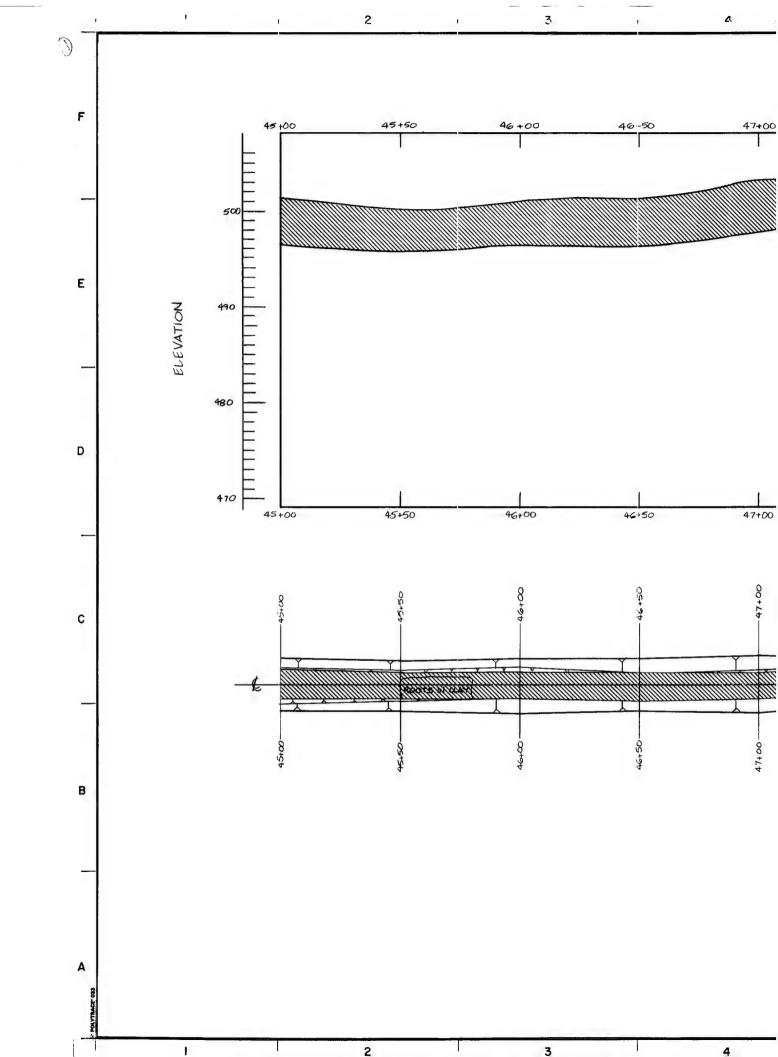


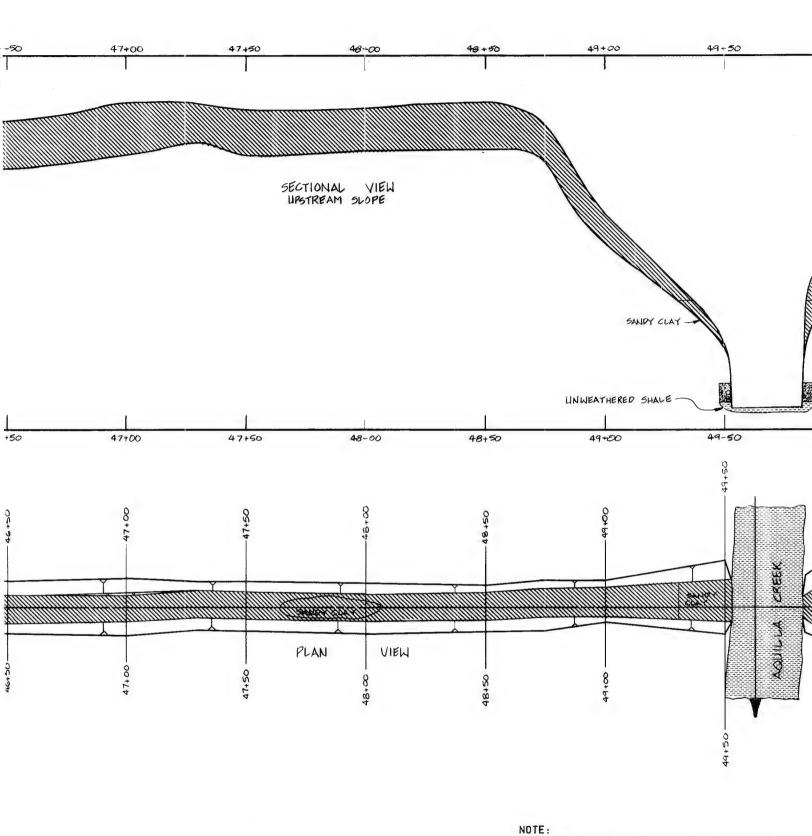




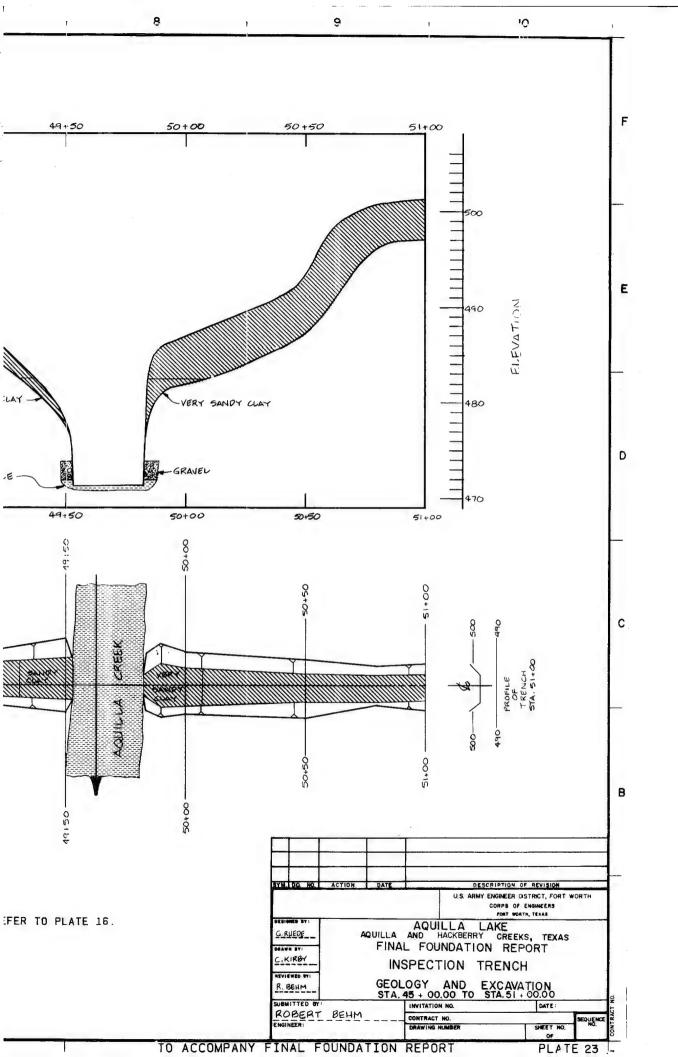


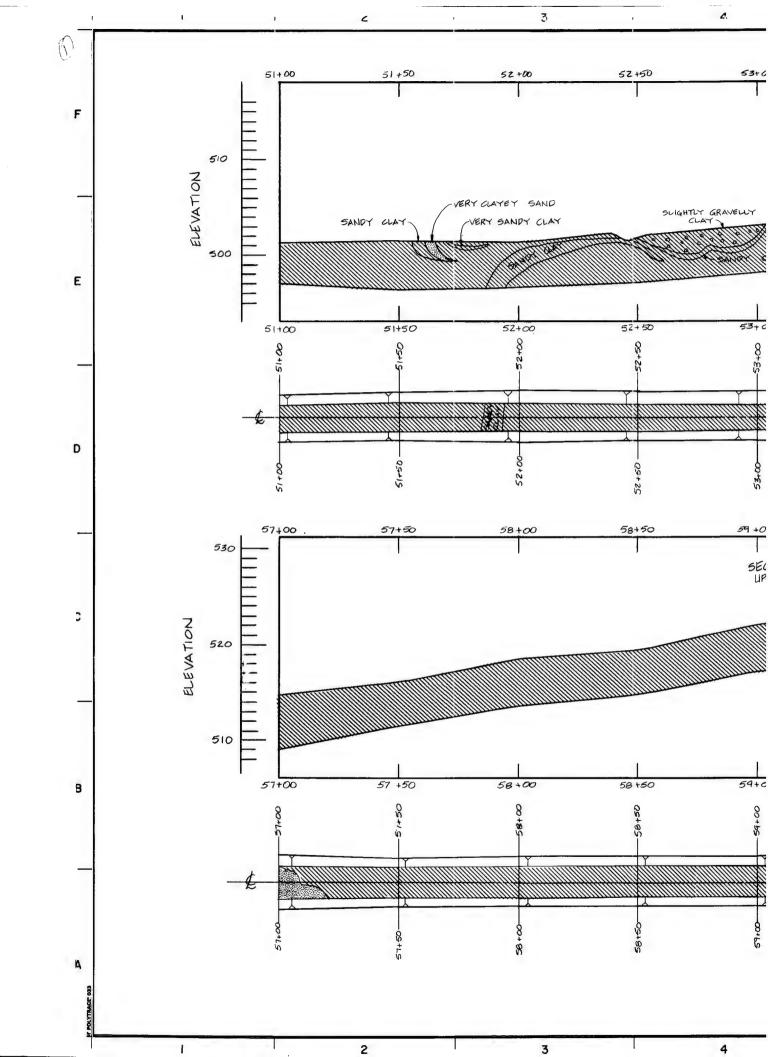


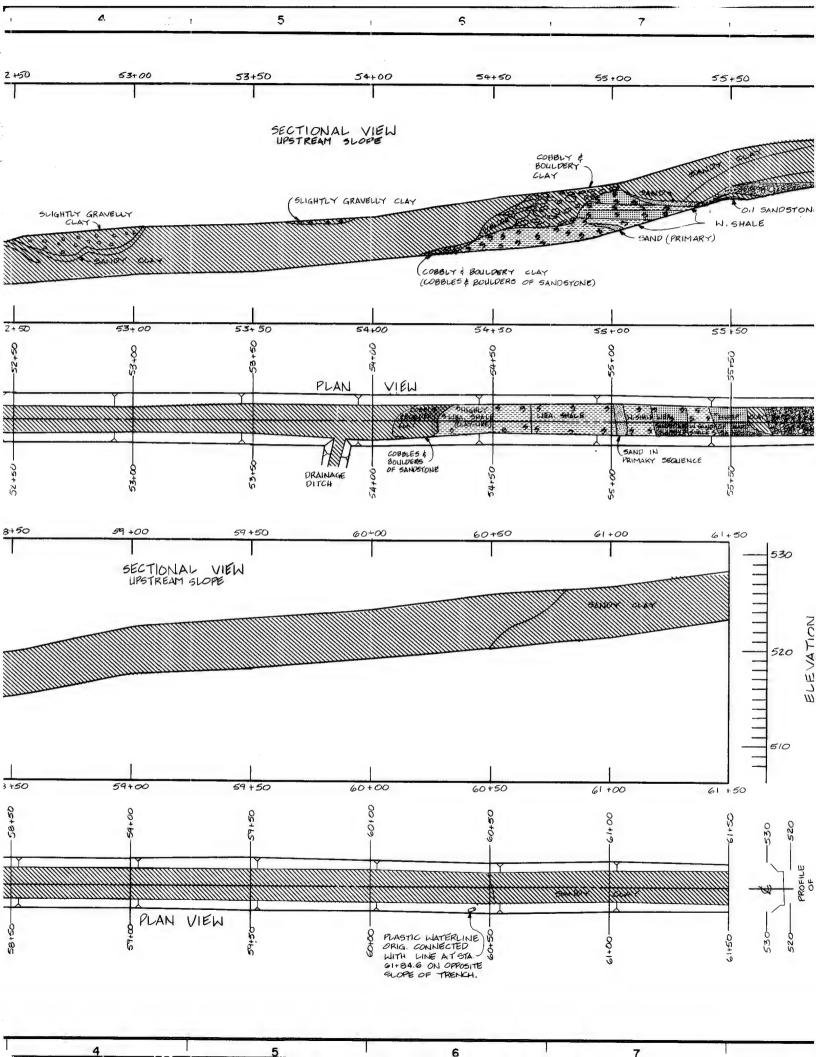


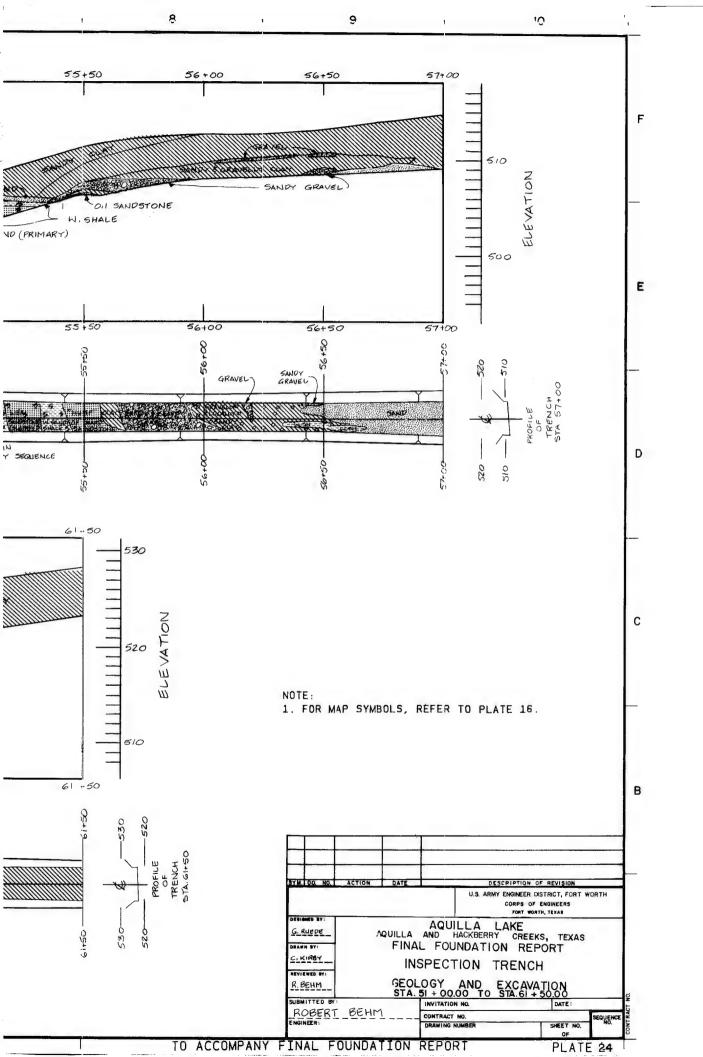


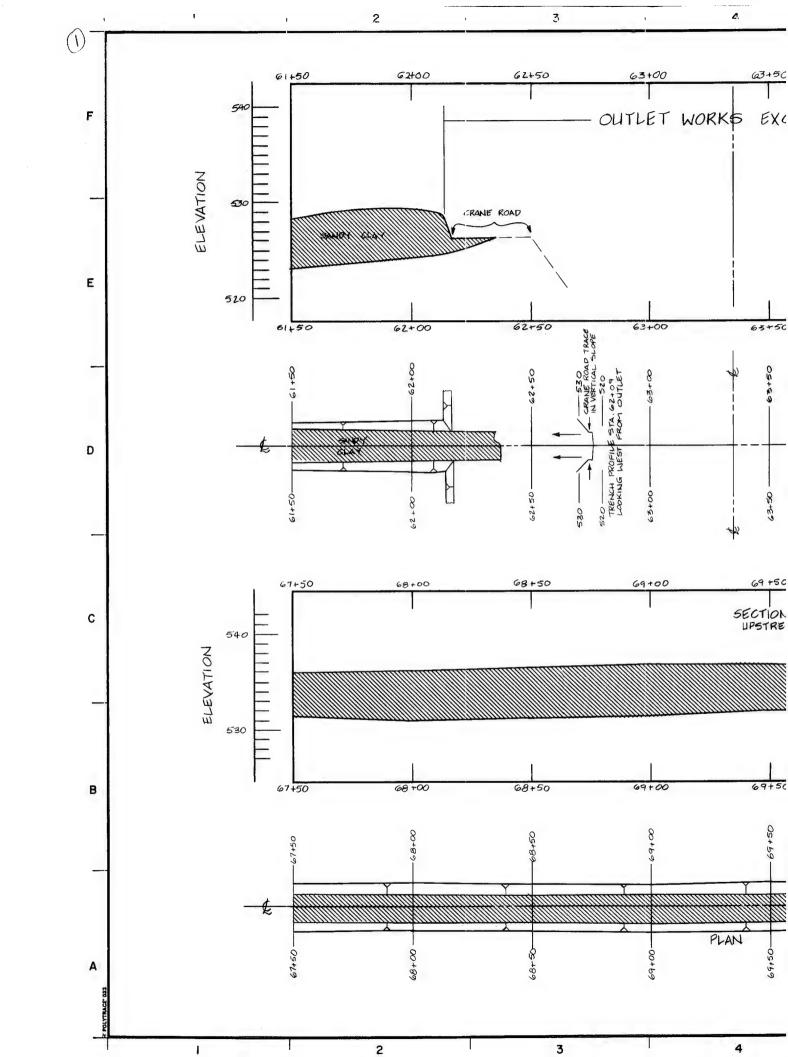
1. FOR MAP SYMBOLS, REFER TO PLATE 16.

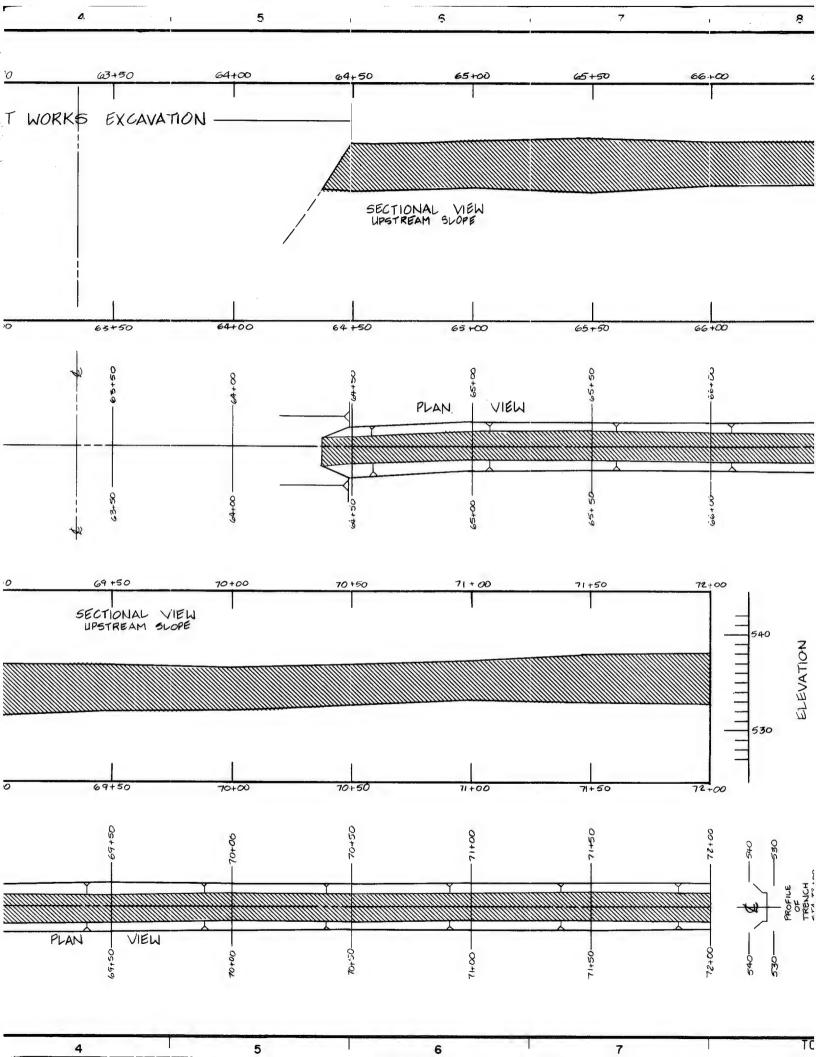


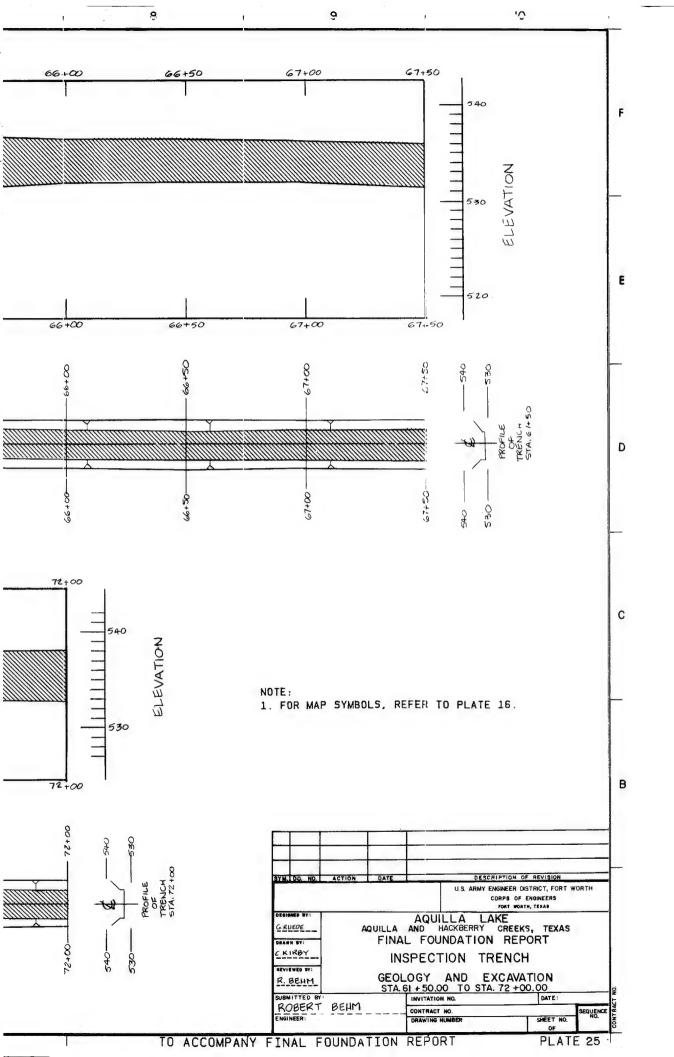


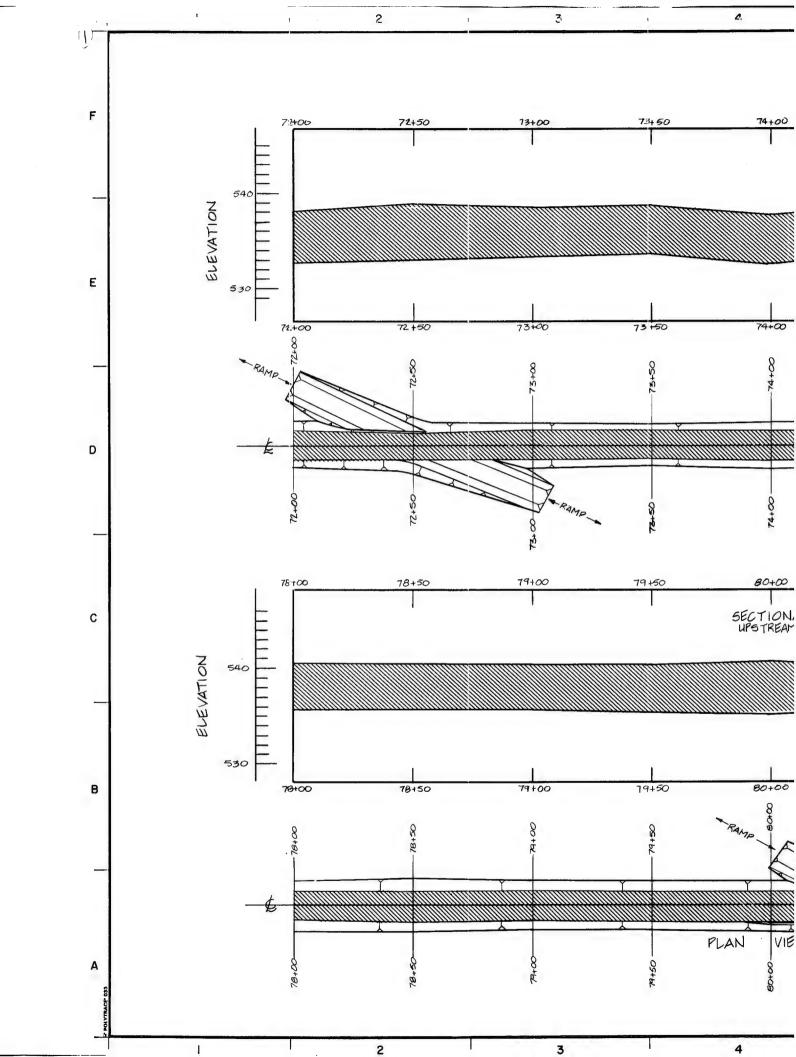


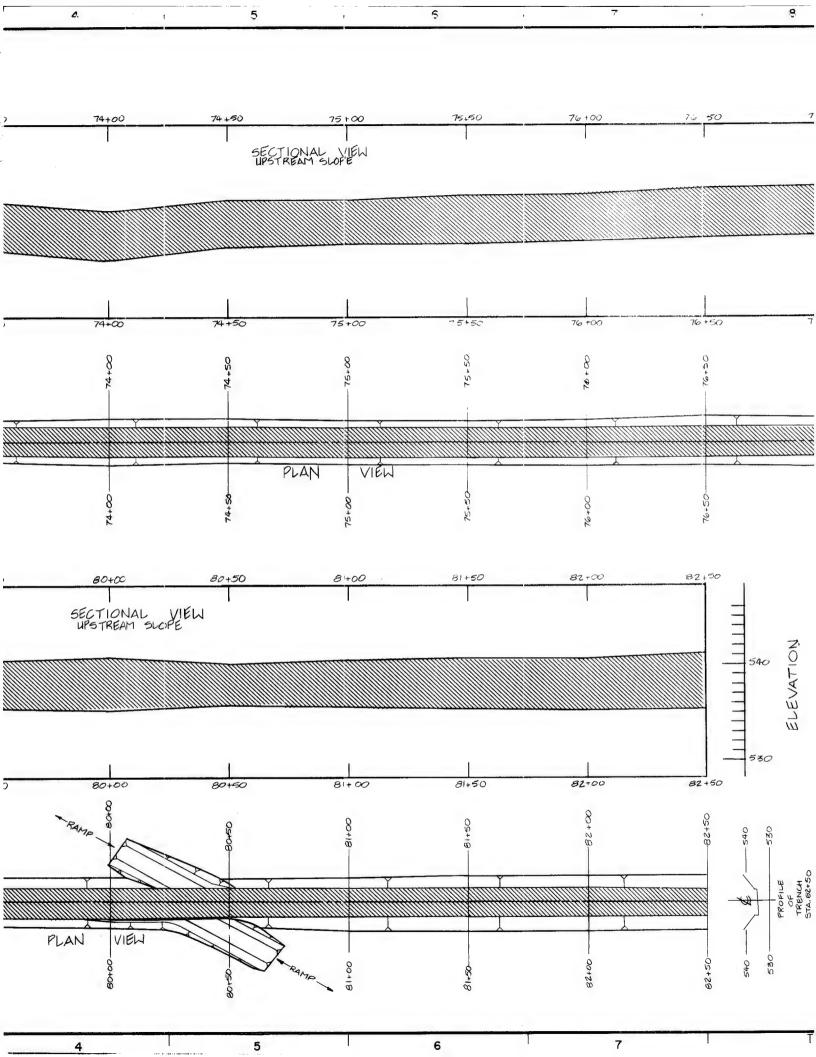


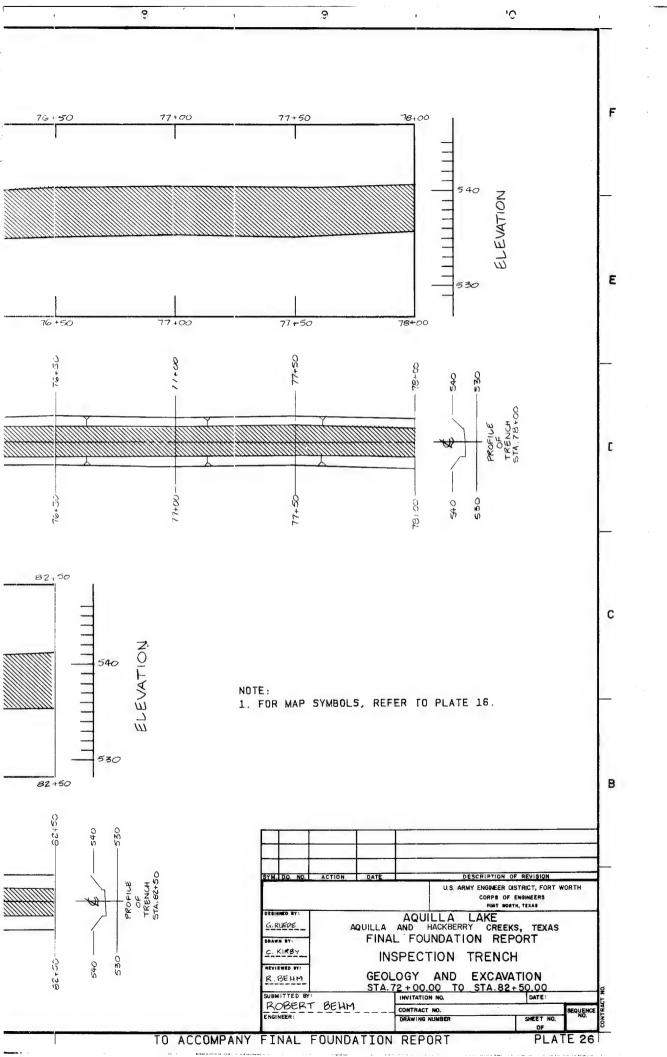


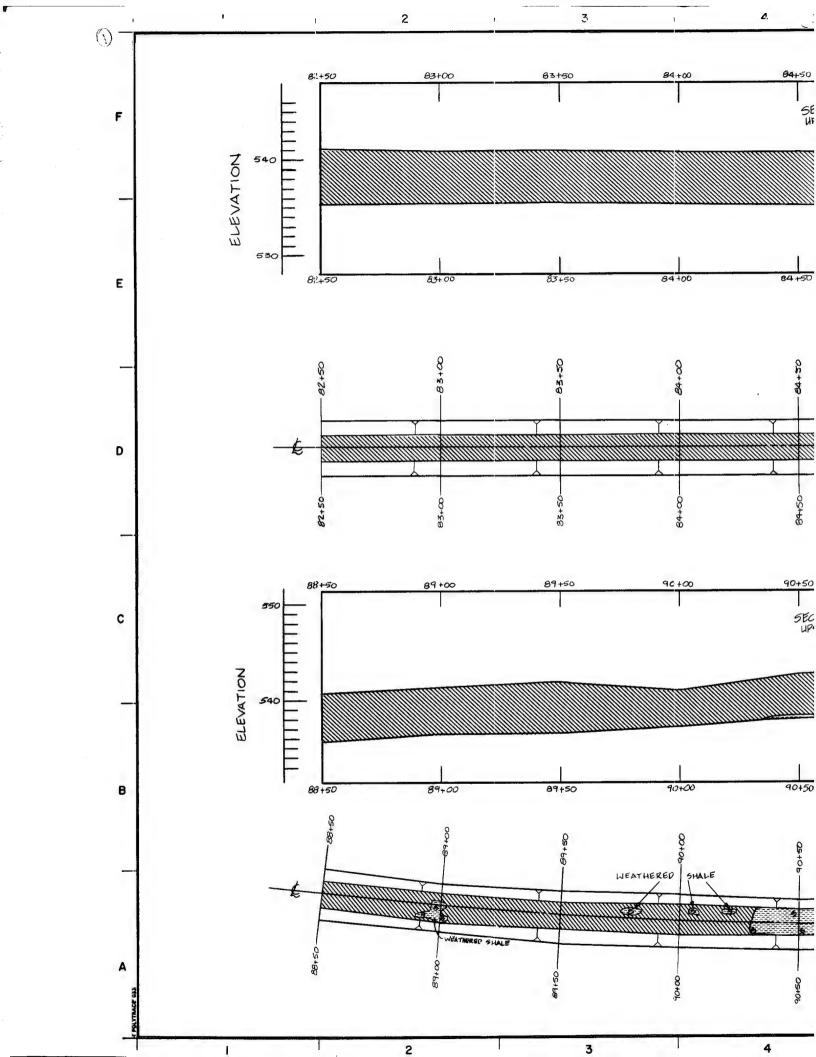


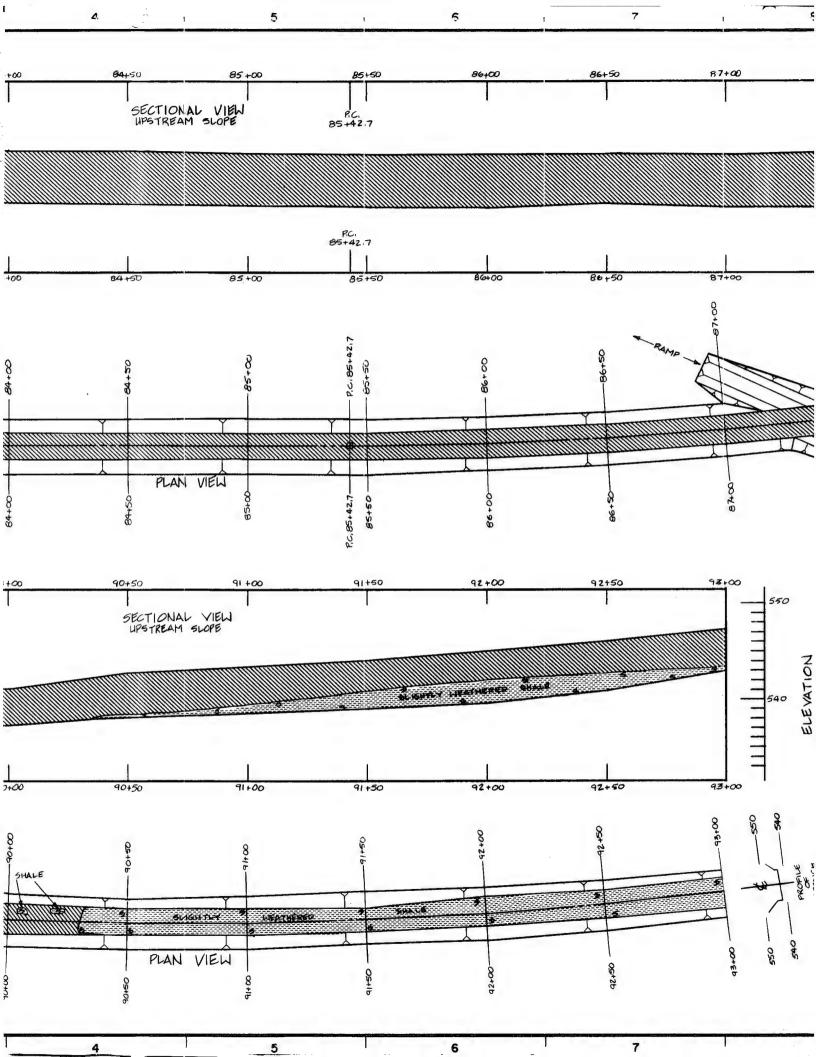


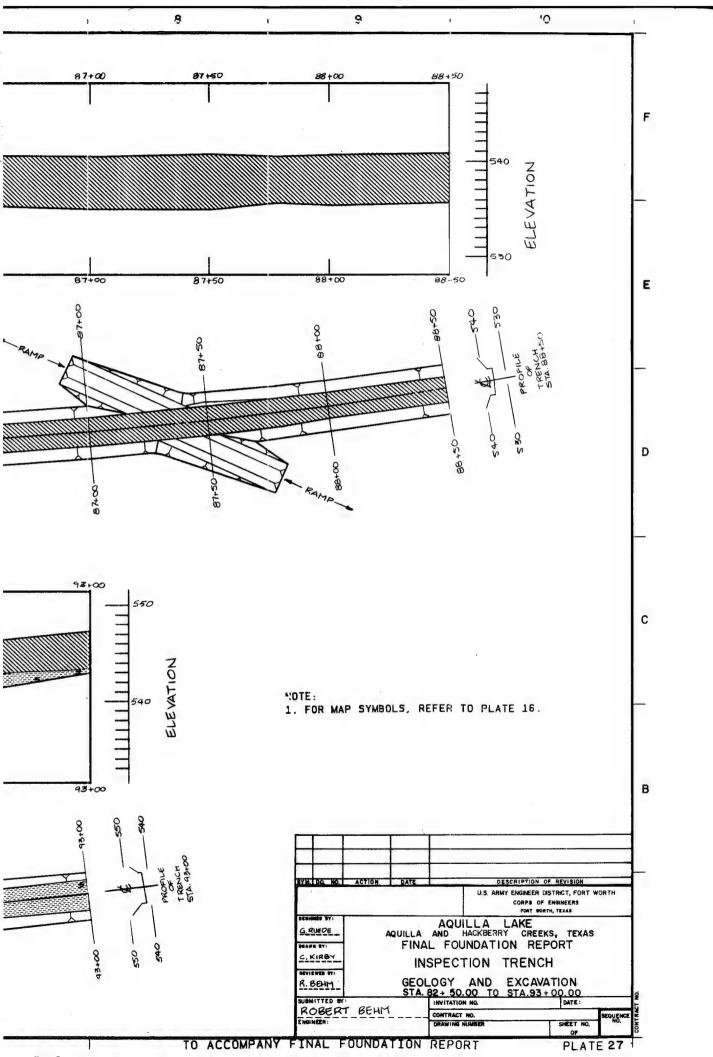


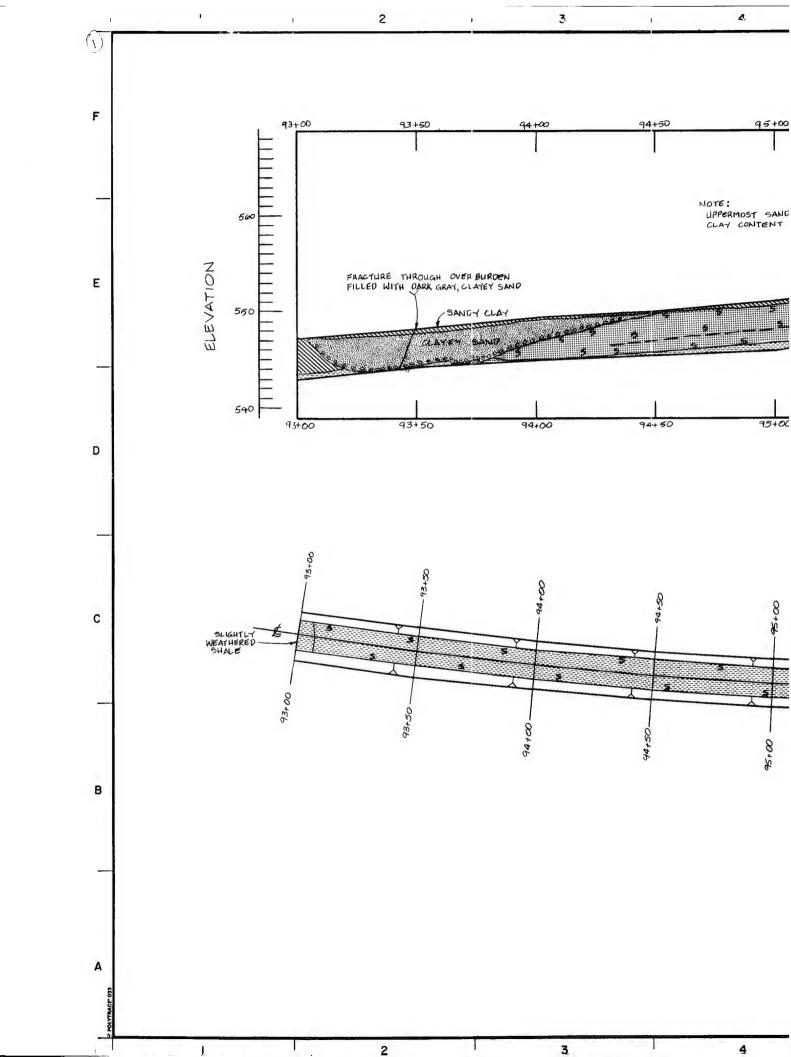


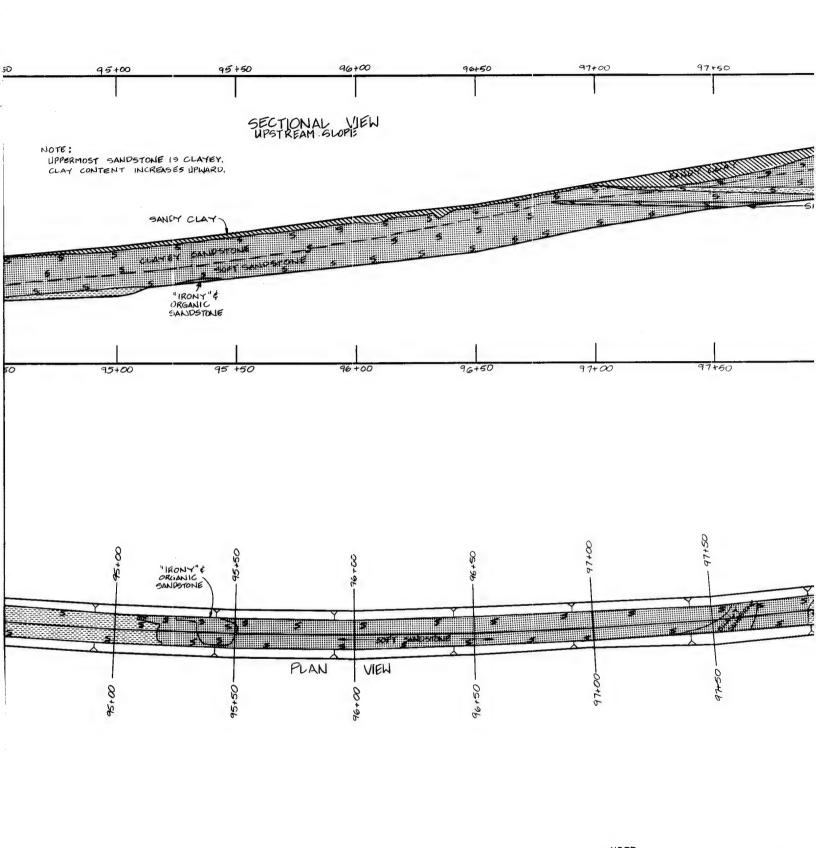




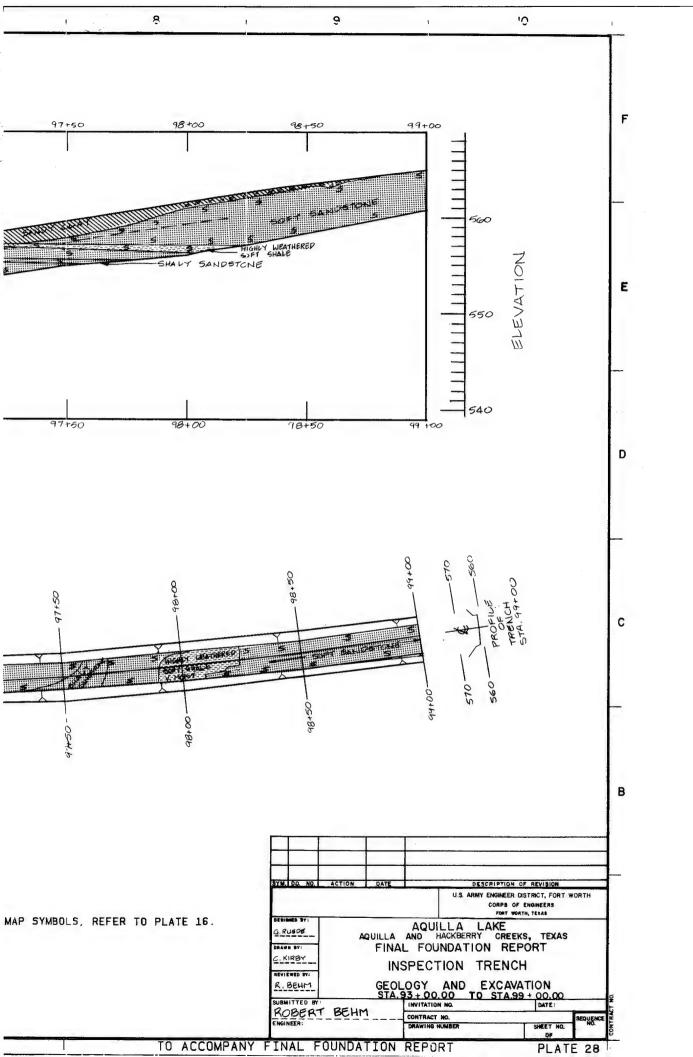


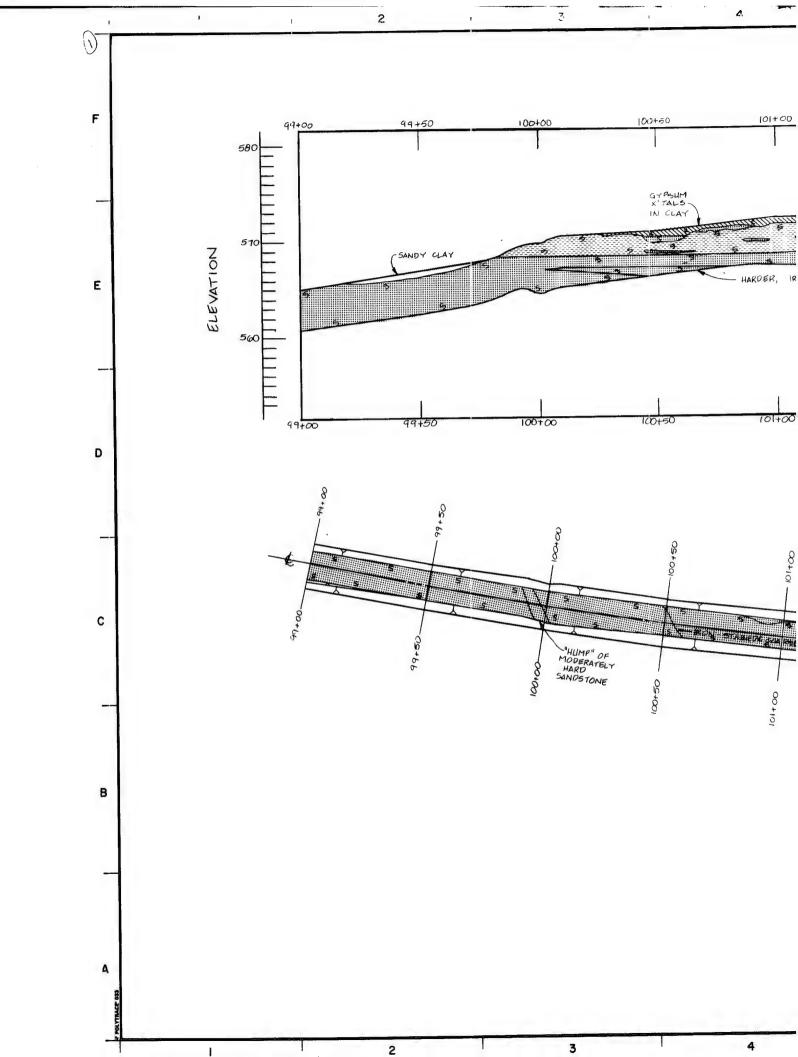


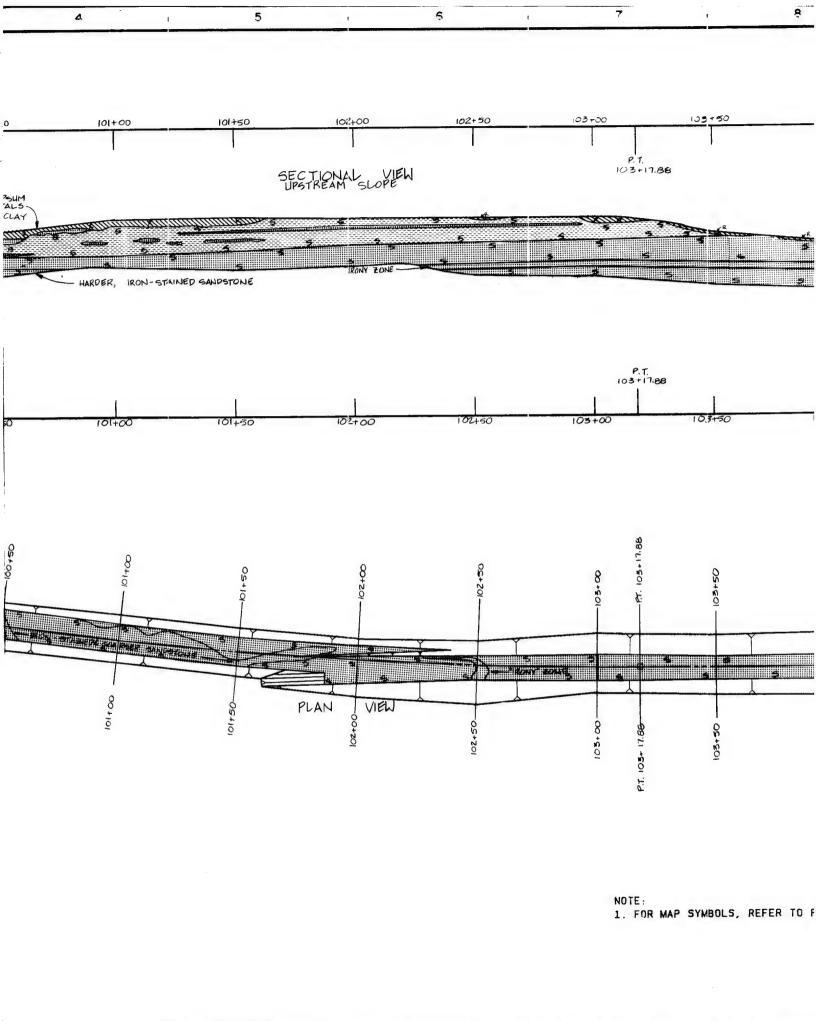


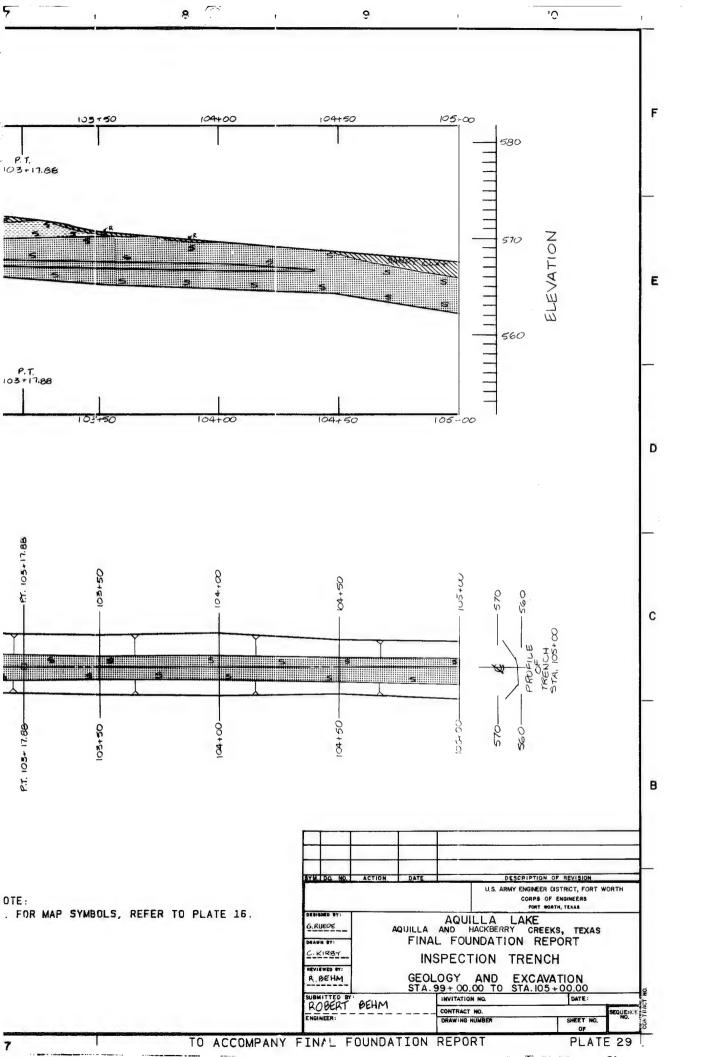


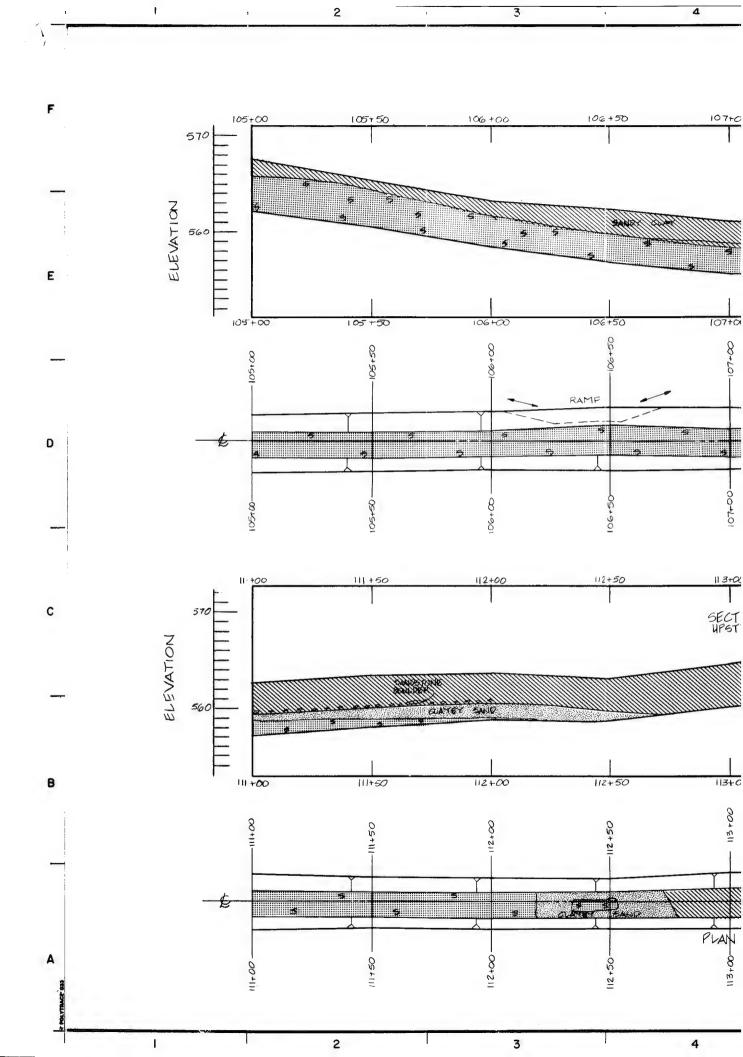
NOTE: 1. FOR MAP SYMBOLS, REFER TO PI

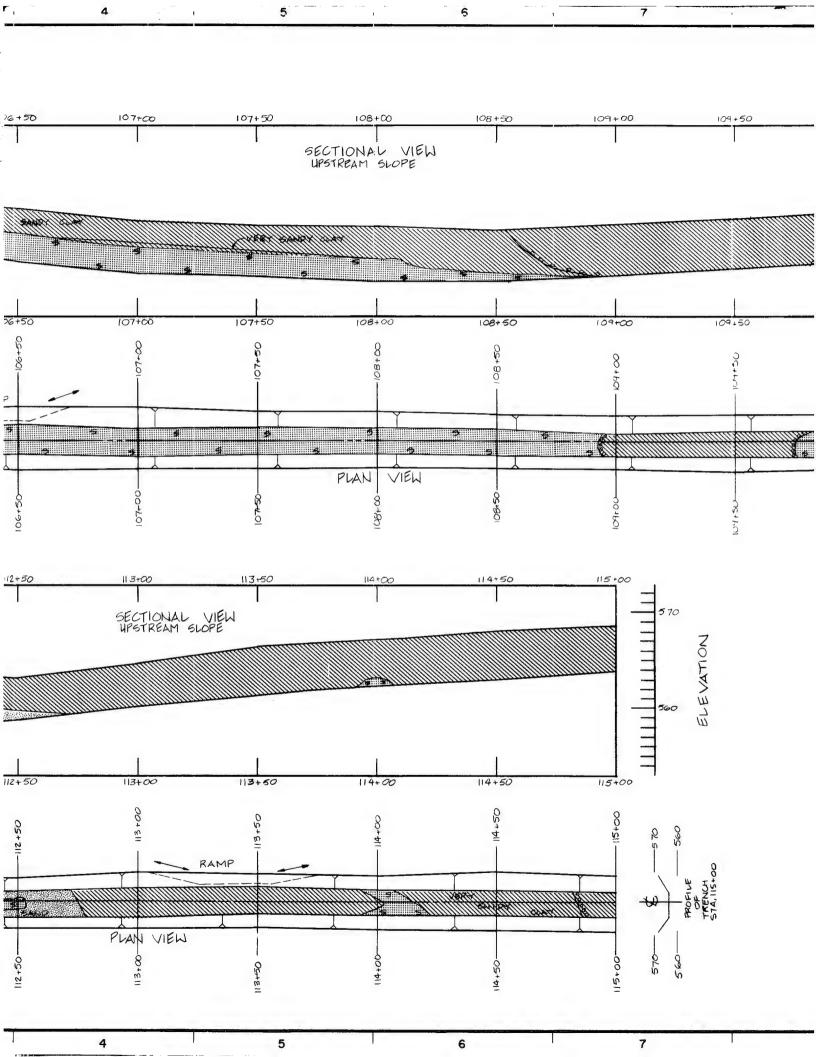


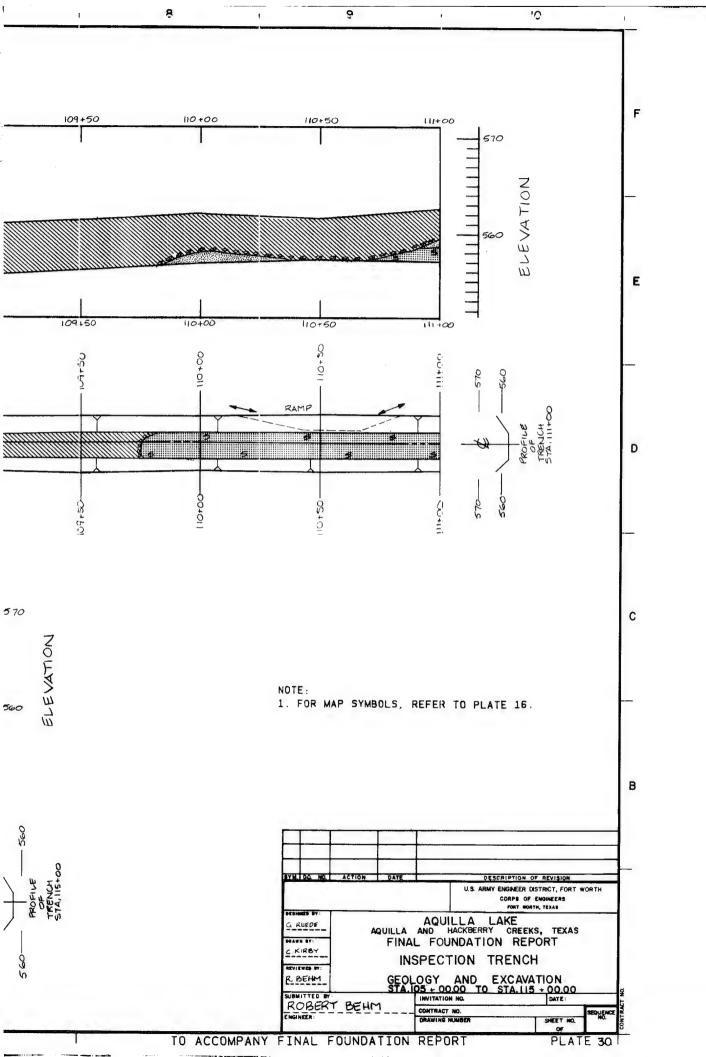


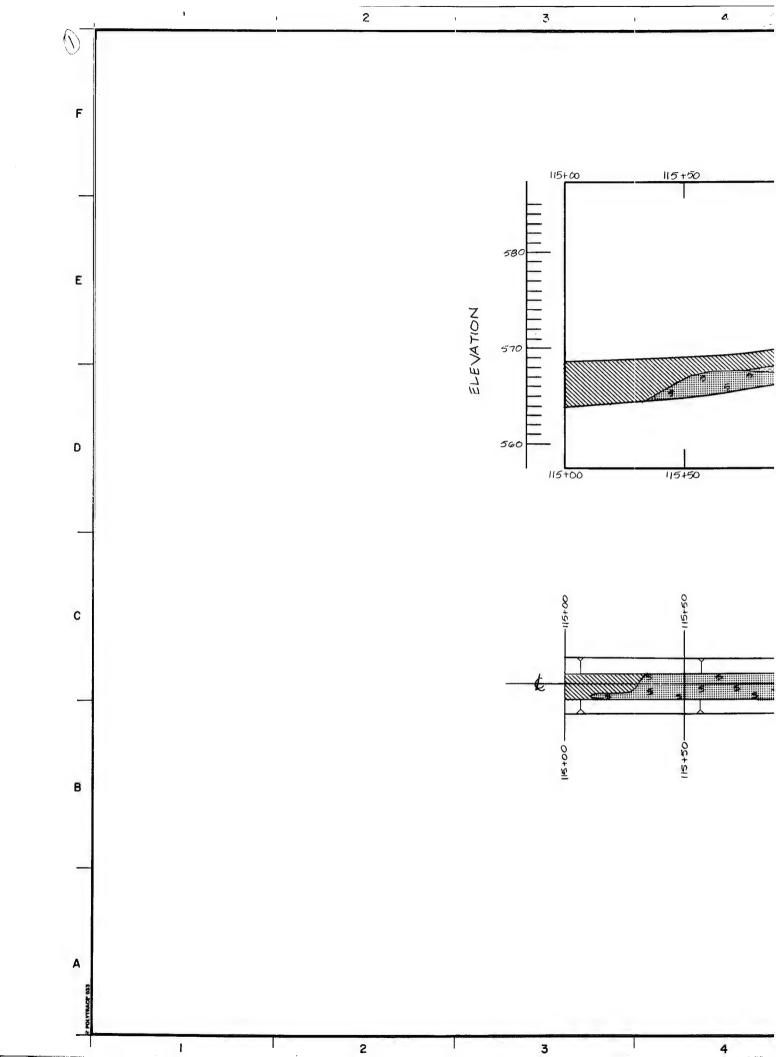


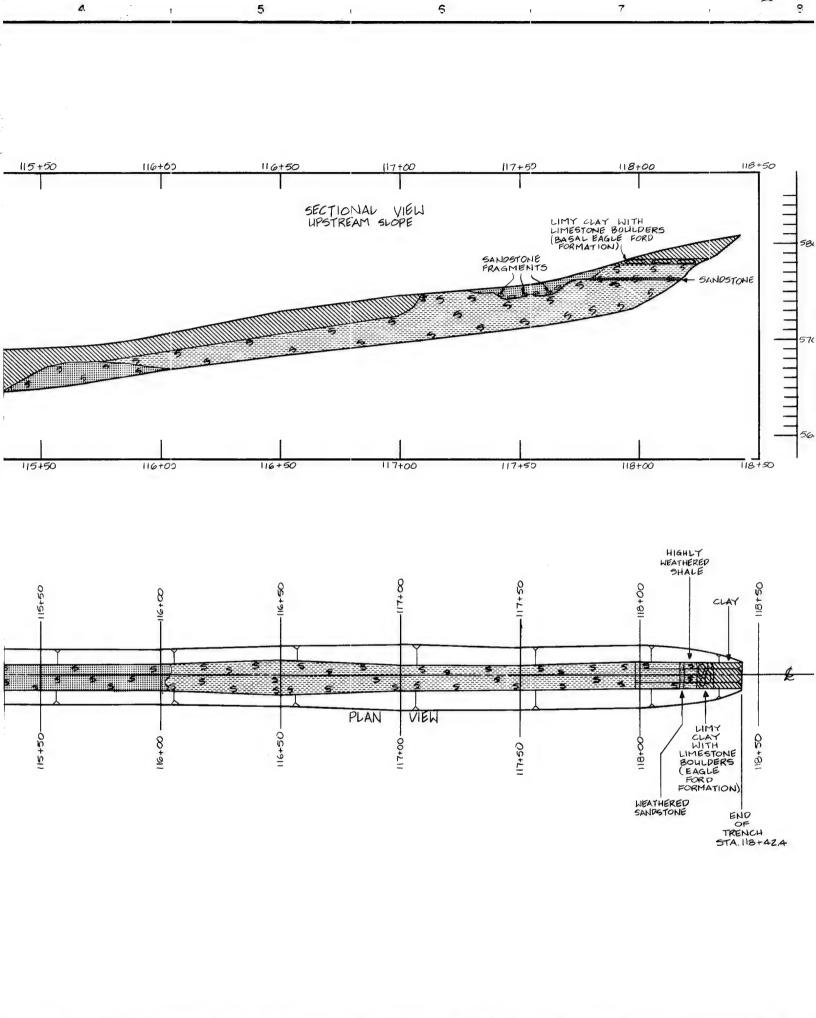


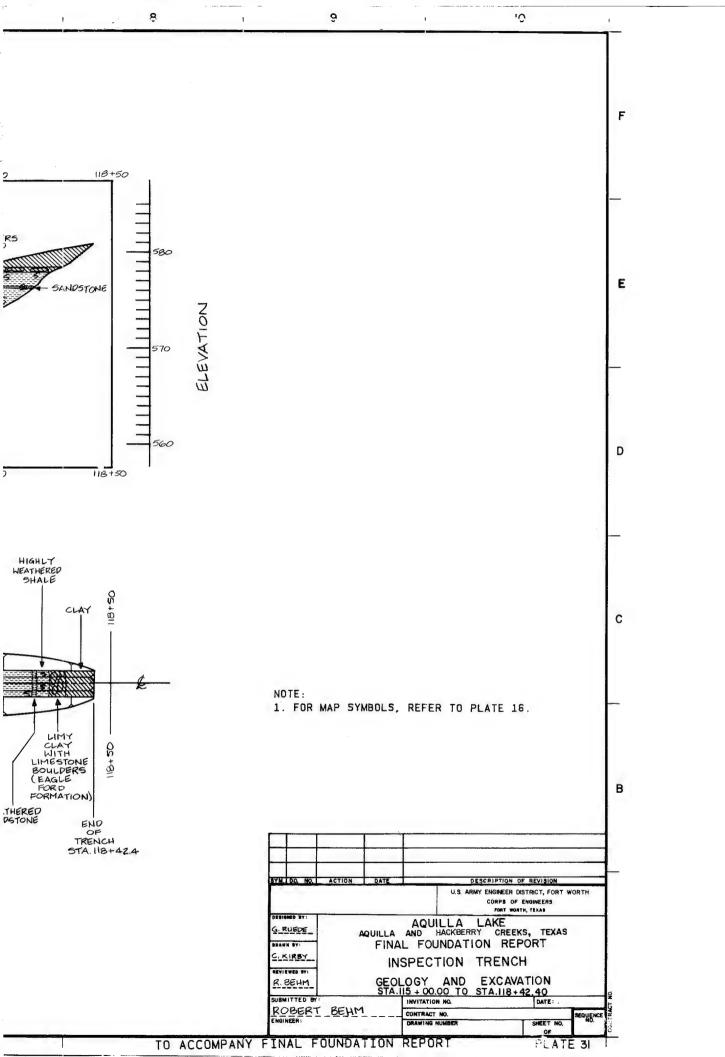












DRILLING LO	c	Southwestern	THISTALLA	For	t Wo	Heie No. 8A6C-1
107FCT		Southwestern	W. MIE	ND TYPE	W BIT	Tth ow? sweets
Sit	e-D	Station)	_	ACTUMEN	s petition	MATION OF DRILL
COP	ps c	f Engineers	12 TOTAL	Pai	ling	310
OLE HO IA		8A6C-1	M. TOTAL	- HUMBER	CORE #	oxes 8
MECTION OF HO	Bros	in		ATION GRO	187.4	TER ##
DIRTICAL ()	MC L IM				07 NO	Doc. 72 22 Dec. 72
HEARTS OF OVE			10 7074		COVER	V 200 BORING 99
GYAL DEFTH OF		60.0'		120	st-	H Duce
	LEGE	CLASSIFICATION OF NATE	ERIALS	307	NO.	Della de Carres de la constante
	Ť	0.0'to 3.0'				••
1 =		CLAY: slightlys	city, lear		Α	1. Set plastic pipe
		moist, inedium, grayish brown small grave & fin	Truce		В	٠, ٣
		3.0' Fo 5.0'			C	2. JARS:
=		CLAY Slight	by sandy		D	
=		sized lime part	icles 2		E	B. 3.0' to 3.8'
-		So FOSAU CLAY: Slight as fine to coar. Sized lime pagri Jean, very stift 18-3.8 Trac to The greyis 38-50 Soc crombly, ten 50 to 63.3	e anavel	,		A. 0.0' to 3.0' B. 3.0' to 3.8' C. 3.8' to 5.0' D. 5.0' to 6.3' E. 6.3' to 7.5' F. 7.5' to 14.0' G. \$4.0' to 16.5 h. \$33.0'
10.0		10 9/4", grayis	neuhat	1	_	7. 7.5 to 14.0
-		crumbly, tan			F	h. & 33.0
-		CLAY: Very li	my loon			
		CLAY - very li Slightly moset to V. Stiff light ton white line weath	Hodry .	L+		3. CARTONS:
	1	white line weato	clay		G	1. 17.4 to 18.2 2. 19.4 to 20.4
		Consistency		14.5	-	3. 27.1' to 27.9 4. 33.6' to 34.6
		Sandy (at	Sandy to	17.8		1. 17.4' to 18.2 2. 19.4' to 20.4 3. 27.1' to 27.9 4. 35.6' to 34.6 5. 42.9' to 43.8 6. 46.9' to 47.9 7. 51.8' to 52.8
	1	CLAY slightly 1 Sincy (gtz sand Slightly moist me stitt, crumby, 1 2 Trace to small To	oderately	19.4		6. 46.9' to 47.9 7. 51.8' to 52.8 8. 55.0' to 56.0
20.0	-	2 Trace to small To	small	19.4	1	8. 55.01 to 56.0 9. 59.01 to 60.0
1 3	1	Sand store frog 7.5 to 140	und-size uents	1.00.1		A Water lass of
-	1	7.5 to 14.0'	,	60.0		4. Water loss at
1 3]	CLAY Chighty shole): V. thin II wear to clay com maist stift. Choly structure tran with white Co	was strks		2	5 V 4 4 - 3 - mm a m4 a/
	_	wea. to clay con	STITT	25.0	-	5. Haterial expanded 1.0' the first 19.0' of core recovered.
-		Stan with white et	, yellowi.	14	_	recovered.
		3, 140 1/2		10.0		
1 7	恢	CLAY : no visi	idelima	29.0	3	6. Started 6" core # 16.5'.
30.0	11	CAY: no Visi full funy reaction fmoist, stirt to v. I shalf structure, I fan with numer	to aced,	10.0		
	V_{ℓ}	shely structure,	yellowis	4,		
-	17	Jan with numer of 165-17.4 SOUDSTOUR HAR		33.0		
	14	A SANDSTONE: NO.	AD. CALC.		4	
	1//	FINE GRU. GOLD - DA	EL RED.	10.5		
	1/2	1 JT 4-150 1 JT 4-150 1 JT 4-150 1 SAUG SHUPY CLAI 1 LENSES STIFF ME 1 MOIST INDIGATE 1 YELLOW & OSK. SEA	050 W/	37.0		
1	1/	H SANG SHUDY CLA	Y & CLAY			
-	V./,	19 moisi inRIGATEL	RSO	10,5		
	11	17 11100 1 011.024	7.	41.0		
		25.0' to 28.6	B *		5	
-		CLAY-SHALE		L. 0.0		
_	77	5 25.0' to 28.0'	drk. gra	art .		+
	1/,	28.0' to 28.8'		45.0		
-	1/2	Sandy, med st: lenses of gray	iff, thi	L. 0.0	6	
	19/	6 ork. gray.				
	14.7	SAKDS TONE	8.6'	49.0	1	
50.0		SANDSTONE 28.4' to 26 HARD, calc grained, di	., fine-	L.	-	-
				6.0		1
	I	17 SAND		53.0	7	
-	Ē	CLayey, med. co	ompact,	1.		
		8 drk. gray.	-) range	0.0	-	-
-	F	BHALE	81	57.0	-	
-	I			L.0	8	
	1	Stiff-v. stiff	, lamina blue-bli	60.0		
50.0	-	12		00,0		1
	=	EVAN		1		
	∄	Clayey, med. or moist, drk. gr	ompact,	1		
-	=	19.1' to 60.				
	=	BHALE		1		
-	E	v. stiff, fiss leminated, moi	ile, thi	1 1 1 1 1	İ	
	3	blue-blk.	OFE	1	1	
	=	Some siltston	e lense	•		
-	3	or nodules.			1	
	=	T,D. 60.0)			
	=	.,		1		
-	=					
	=					
	\exists					
	4					
	=				1	
						111a -D -64660

Bert 1	ING LO	c P	Sou thwestern	******	P.	ort W	ort	th.	MAGC-2	1
PLANET		quill		M MIE	-	W # E	al.	ger, t	core	
Lecavion	10000	4 + m	D		PACTURE	R 1 0(1)	OHA'	ION OF BILL		
HOLT NO.	G	orpe	of Engineers	15. 707.5	4 1 2 2	Paili OYER	ng	310		mode
	MILLEA		8A6C-2	14. TOT A		-	OFE			
. binection	H OF HOL			M. DATE	ATION SR	1974		72	19 Dec	972
THECEPE	3 OF OVE	ROURDE	3.51	17. ELEV	ATION TO	P OF NO	C.E	574.0		
. DEPTH DE	HLLED H	TO ROCK	56.5'	16. TOT A	TURE OF	PRESE	9	7/ /	86	7
ELEVATION	PTHOP	FEGEND	CLASSIFICATION OF MATERIA		L COME	1	-	343	W.	made
•					eav .	100		-		_
	1		O.O to 3.0 CLAY: slightly 3 as med -coarse 3d as ized lima particle Most, V. stiff, ton near olive drab.	andy		A	ī.	4" pla	stic pi	pe
			3/200 lime partich	2				40.0	debth for wat observe	or
			near olive drab.	, -				Tevel	observe	tion
	=		30'4035'			D	þ.	JARS:		E
	-	//	CLAY: limy as w	hite		E		A. 0.0	to 3.	o;
	· -	c(y	lime atrks wea. to consistency, Mois! Suggestion of sher structure, light g	* This	9.0	F	1	C. 3.	to 4	ő;
	10.0		structure, light &	ragish	4.5			E. 6.0	to 7.	8'
	Ξ		CLAY: moist, st	4,	11.0			G. 2	3.01	
			stained olivedryb.	Spl.	Las		3.	CARTO	18 :	
			Suggest on of ship structure, is the structure, is to the structure, and the structure, is to the structure, and the structure, is to the structure, is to the structure, is the structure	Lotona to	13.5	. 1				6.4
		:	It ylu powder wie	fran	1.5			3. 31	7' to 3	5.7
	Ī		Appears to be highly shale w/ SS. same	nea	17.0			1. 15 2. 24 3. 31 4. 40 5. 45 6. 51 7. 57	0' to	6.4 25.7 32.9 46.3 52.5 58.6
	. =		40' to 6.0'				1	6. 51 7. 57	6' to	58.6
	20.0		soft, It gray w/i	70.00 F.L	L1.3					1
	. =		hard clay).	~	210	1	*	£ 9.0	6" a)
	=		SAND clayey and	4,	LO.5	5				E
	1		G. S. To T. B. SAND. Elegay and Carly is amounted Sand Sand Sand From Sand Sand S	dis	23.5					F
	Ξ	1/1/2	mod stiff, soud It	dell	20.5		-			
	=	1477	iron-staining-a	mi re	13.7		1			E
	=	/////	7.5'-90'	c=44	20.0	3				- 1
	=		Trace of times only	line	Σ .H.3					F
	30 <u>.0</u>		rusty dork brown.	Cont	ine.					
	=	1///	ironstone. Sand	versu						E
	=	1/4/3	iran concentation		33.3					- 1
	=		SULINSTANCE.			4				
	_5		9.0-9.5 HARD, CAL. GRU, POORLY BEDUED, STAINED, DEL RED & 9.5-11.0 CALC. FIN. DENSE V. DEUSE,	INON	10.0		1			E
	=		STAINED, DER RED &	YELLOW.	37.9	_	1			
	=		DENSS. V. DENSE, ORK. YELLOW.		41.7					E
	- 3	1					\vdash			
	=		11.0' to 32.5'			5				Ē
	=		3VID		42,4	-	1			
			11.0' to 24.5' Fine-grained, use		0.7	6				
	=	5	Fine-grained, med compact, sli. soi sli. Fe stain, li tan to tan.	at,	46,0	0				
	=		tan to tan.							E
	=		Note: Nore Fe stain 22.0' to 24.5	from	1.0					
	50,0				50.3	,				E
	Ξ		24.5' to 28.5' Clayey, fine-grad some thin clay le	ned,		7	1			E
	1 =	6	moist, drk. gray		0.4					E
	1 =		28 81 40 82 81				1			ŧ
			V. clayey, thinks bedded, moist, me compact to dense,	d.	54.8	_				
	-		drk. gray.	•	L. 1.4	8	1			
	=	17	32.5' to 60.0		1.4					
	60.0			el v	60.0		ı			
			fissile, v. stiff moist, blue-blk.	,						
	=		liote:							ŧ
	=		Carton #3 co	ntair chale	8					
			44.0' to 44.2'			1				
	-		BILTSTONE - Hard, concholdal lt. tan.	fraci	ure,					
			1t. tan. 52.4' to 52.6'							
	=		SANDSTONE -	- en- 1-						
	-		HARD, calo, fine- drk. gray.	-Brail	ed ,					
]		P							
		1	T.D. 60,0'	-						
		}								
]									
	1 =	3								
1										

DRILLING LOG	Sou thwestern	THE TALLAT	For	L Wo	Nois Me. 8A6C-1
Aqu111	_	15. BATUM	POR ELE	ATION	Tth one sent
Site-D	3 (artim)	1	W-4	1 4 mm	310
Corps	of Engineers	12 TOTAL	NO. OF O	TAKE	N 7 O
ME OF BRILLER	8A6C-1	SE ELEVA	-	-	axes 8
BY C		M. DATE H		119	Doc . 72 22 Dec . 72
HEARTICAL CHICLI				OF HO	E 572.0
TAL DEPTH OF HOLE		M. HERAT	TO.	see F	71 Dus
VATION DEPTH LEG		N. SHENAT	02	200	District of the standards
			-	7	and are, in agreement
	O.O'to 3.0'	the lear		Α	1. Set plastic pips
1 =	moist, inedium, di grayish brown Tr small graval & fine	ork			1. Set plastic pipe 4", to
1 =	small graval & fine	roots.		B	
1 =	CLAY: Slighth	Sand		C D	2. JARS:
	as fine to coarse	Sand		F	a. 0.0' to 3.0'
1 =	lean, very stiff	to have	d,		C. 3.8' to 5.0'
E.J	to The grayish	brown			E. 6.3' to 7.5'
10.0	De 10 St. Slightly as fine to coarse sized lime particular, very stiff 30-38 Trace to This grayish 38-50 Some crumbly, ten.	ennat		F	A. 0.0' to 3.0' B. 3.0' to 3.8' C. 3.8' to 5.0' D. 5.0' to 6.3' E. 6.3' to 7.5' F. 7.5' to 14.0' G. 14.0' to 16.5 h. 2 33.0'
]	50 to 6.3		!		n. •))
=	CLAY: Very lim Slightly most to V. Stiff light ton. H White lime weato	dry			3. CARTONS:
=	white lime weato	clay	er .	_	1. 17.4 to 18.2 2. 19.4 to 20.4 3. 27.1 to 27.9
	Ca' L TT		14.5	G	3. 27.1 to 27.9
1	LAY: slightly se Sancy (gtz sand) Slightly moist mad stitt, crumbly, lig 2 Trace to Small Tos	ndy #	17.0		1. 17.4' to 18.2 2. 19.4' to 20.4 3. 27.1' to 27.9 4. 33.6' to 34.6 5. 42.9' to 45.8 6. 46.9' to 47.9 7. 51.8' to 52.8 8. 55.0' to 56.0 9. 59.0' to 60.0
1 =	Slightly moist mod	angley	1.0		7. 51.8 to 52.8 8. 55.0 to 56.0
20.0	2 Trace to small to s	mall	19.4	1	8. 55.0' to 56.0 9. 59.0' to 60.0
=	gravel to course same sand store trogmi	desira	10.5		A Water lass of
1 =	7.5' to 14.0'		60.0		4. Water loss at 22.5'.
	CLAY Chighly shole): Y. thin lim wea. to clay commune to clay commune to the total short stiff - V. S. Scholy structure, y tran with white the	e strks		2	
=	maist stiff - V.S	7.77.97	25.0	-	5. Haterial expanded 1.0' the first 19.0' of core
	ton with white et	w graye	A		rocovered.
1	3 140 to 165'		[0.0	_	
1	CLAY : no visit	lelimo	29.0	3	6. Started 6" core # 16.5'.
50.0	Show of almost was a strong of the strong of	H, ho	60.0		
1	f sholy structure, you	ellowis	4		4
	Jo gray stracks.		33.0		
-37.	A SANDSTONE HORD	calc,	10.5	4	
1/2	17.17.4-250	RED.	20.5		N.
1 3/	(1) 7.4. 150 LAY: INTERBEODS SANOY CLAY LEUSES, STAF-MED THOMAS ON GRAY. LEUSES, STAF-MED THOMAS ON GRAY.	(m a	37.0		
1 1/2	LENSES, STIFF-MED	COMPACT			-
1 1	I YELLOW & ORK. GRAY.	RED	20,5		
-			41.0		
	CLAY-SHALE 28.8'			5	i
1 1	5 25.0' to 28.0'	1	0.0		
1 3/	Still, Monte, dr	r. graj	45.0		
3	28.0' to 28.8' Sandy, medstift lenses of gray s	r, this	*	6	1
1	6 drk. gray.	ano,	0.0	٥	
	SAKES TONE	.	49.0		
50.0	SAKDSTONE 28.4' to 28. HARD, calc., grained, drk	fine-			
1			0.0		
	7 5AND to 40.1'		53.0	7	
	CLayey, med. com				
#	moist, some clay	lense	0.0		
	10.1' to 43.8'		57.0	_	1
			L. 0.0	8	
	Stiff-v. stiff,	lamina: le-blk	60.0		
50.0	43.8' to 49.1'		VU.0		1
1 =	BAND				
=	Clayey, med. com moist, drk. gray	pact,		1	1
=	19.1' to 60.0'				
րախագիումիումիումիունու	BHALLE		1		
E	v. stiff, fissil	o, thi	1	1	
=	blue-blk.			1	
=	Some siltatone or nodules.	lenses			
=					
1 =	T,D. 60.0'		1		
1 3			1		
=					
1 3					
1 =					
1 3					

DOLL 1	ING LO	c P	Southwestern	MSTALL.	Y P	ort W	ort	Halo M	SACC-2	1
PALET		quill	n. Dani	M. MER	-	W # 1	21	ger, 6	core	1
LECTVION	/Co-	1 1 0 -	D D		FACTURE	R'S OF SE	DHAT	ION OF BRIL	1.4,	1
mont no.	C C	orpa	of Engineers	12. TOTA	1 2 OF	Pail1	DE.	310	O D	1
	MILLER		8A6C-2	H. TOTA	ATION GE	CORE I	HORE	. 8		1
DIRECTIO	H OF HOL			M. DATE					19 Dec . 72	ł
THERME			3.5°	17. ELEV	ATION TO	- 05 110	LE	574.0		1
. DEPTH D	HLLED H	TO BOCK	56.5	16. TOT A	TURE OF	PROVER	9	77 7	86 .	ł
L TOTAL D		FEGEND	CLASSIFICATION OF MATERIA		S COME	1	00		Wande	1
•					EAV.	HO.			P. 10 régrédés and	T
	. Ξ		O.O to 30 CLAY: slightly 3 as med-coarse sa sized lima portick moist, V. stiff, Ton near clive drab.	andy		A	1.	4" pla	stic pipe	E
	=		3/200 lima partich	nd=		~		40.0'	stic pipe debth of for water	E
	=	*****	near olive drab.	טר		-		level	observation.	Ē
	=					D	þ.	JARS:		E
	-	1./.	CLAY limy as w	hite		E			to 3.0!	F
	. =	cly.	lime atrks wea. to consistency, moisi suggestion of sher structure, light g	the A		F		B. 3.0	to 3.0' to 3.5' to 4.0' to 6.0'	E
	10.0		structure, light g	ragish	4.5	÷		E. 6.0	to 7.6	E
	=		3.5 1040	.4	11.0			F. 7.8	1 to 9.0'	E
	-		shaly structure, in	Sel.	L0.5		_			E
	Ξ		Sized It yellow son	Lotone	13.5	. 1	3.	CARTON		F
	=	:::.	It you powder wo	to	-4_	!		2. 24.	7' to 25.7'	E
	-	:.[Agoeors to be high	trags	17.5			4. 40.	0' to 42.0'	F
	=		4.0' to 6.0		17.0			1. 15. 2. 24. 3. 31. 4. 40. 5. 45. 6. 51. 7. 57.	6' to 16.4' 7' to 25.7' 9' to 32.9' 0' to 42.0' 3' to 46.3' 7' to 52.5' 6' to 58.6'	E
	=		SHALE : weather	red,	L1.3			1. 51.	A 50 20 10.	E
	20.0		35 to 40 LAY: moist, st. statily structure, if cartains four acting sized it yellow sow in governor. August 11 yill powder tuje clay trag & four Lay trag & four S. saem. 40 to 60 SHALE: weathe soft it gray w/ is stating (1/18 x str hard clay). 60 to 78 LAND. Layry an	44	214		4.	Starte	d 6" core	E
	=	•	6.0 to 7.8	,	100	2		€ 9.01	•	E
	Ξ		AND: clayer and Calable Control of the Andrew Control of the Contr	+	13.5					E
	_		Soft, clay is medi	was to	20.5					E
	=	1/2	yallow, clay It bro	we up	15.7					E
	=	11111	7.5'-9.0'		10.0		ļ			Ē
		1147	SAND and SAND	STON	11.5	3				E
	30.0	91/h	grained, slightly a	Cont	ins.					E
	=	4111	traces of red clay	verw	LA	-				E
	-	<u> </u>	Soudstone on degr	ec of	111					E
	=		SANDSTONE			4				E
	=		9.0-9.5 HARD, CAL	c, Fine	10.0					E
	=		GRU POORLY BEDGE, CAL. STAINED, DEL RED & 9.5-11.0 CALC. FIN. DENSE - V. DEUSE,	YELLOW						E
	_=		DENSE V. DEUSE,	E GRY	37.9					E
	=		DAK YELLOW.		41.7					E
	-	14				5				E
	-		11.0' to 32.5'		42.4	3				E
	=		11.01 to 24.51							E
			fine-grained, med	at,	0.7	6	1			E
	-	15	sli. Pe stain, li tan to tan.		46,0					E
]		Votes		g.		1			E
			Nore Fe stain 22.0' to 24.5'	from	1.0		1			E
	50,6				50.3	7	1			E
	_=	F	24.5' to 28.5' Clayey, fine-grad some thin clay le	ned,	L.		I			E
		- 6	Bolle, dr. gray		0.4		Į			E
	=		28.5 to 32.5 V. olayey, thinks		54.8		1			E
	-		V. olayey, thinks bedded, moist, me compact to dense			8				E
	=		drk. gray.		L. 1.4	"				F
	-	17	32.5' to 60.0							E
	60.0			17	60.0	_				E
	-		fissile, v. stiff moist, blue-blk.	•						E
			Note:							
			Carton #5 oc	shale						F
	=		SILTSTOKE -			1				E
	1		Hard, conchoidal	freci	are,					E
	1 =	1	52.4' to 52.6'							E
	-]	SANDSTONE - HARD, calc, fine-	grate	ed,					E
	1		drk. gray.	Or ery						E
	1	1	T.D. 60.0'	_						E
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TO FORM 1836 PREVIOUS EDITIONS ARE DISSOLUTE PROJECT AQUILLE DAM HOLE ACCOUNT		=		28.5' to 32.5'	,	EA .			
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TO FORM 1836 PREVIOUS EDITIONS ARE DISSOLUTE PROJECT AQUILLE DAM HOLE ACCOUNT		Ξ		32.5' to 60.0		1.4			ŀ
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TO FORM 1836 PREVIOUS EDITIONS ARE DISSOLUTE PROJECT AQUILLE DAM HOLE ACCOUNT		=		sand & clay-	ontel:	•			
TO FORM 1836 PREVIOUS EDITIONS ARE DISSOLUTE PROJECT AQUILLE DAM HOLE ACCOUNT		=		44.0' to 44.2'					
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TO FORM 1836 PREVIOUS EDITIONS ARE DISSOLUTE PROJECT AQUILLE DAM HOLE ACCOUNT		=		SANDSTONE -	grali	ed.			
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	NG FORM	1836	PREVI	OUS EDITIONS ARE DREGLETE (THANSLIFE ENT)		PROJECT	Aqui	lla Dam	-cvco-

DRILLING LOG	SOUTHWESTERN	F	PET	WORT	Holo Ho. PACC-3 H DIST. OF 2 SHEET BOOK HEE ER G CORE
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1 3	SE-20 MOIST LEAV.		_		D. 11.0 - 16.0 E. K.O - 11.0
10-	GRAY & YELOW - 6	RN.	5		F. 110-140 6. 140-190
1 3	1.0-11.0 SOME OF	' - m - c			6. 24.0-29.0 N. 19.0-35.0
1 3	CLAY CONSISTENCY	ś2.			I. 350-36.0
	Ageticles weath clay consistency, moist, u. stiff-whe yellowish-thu.	0,			CARTON SAMPLES
=	LINE PRETICLES, W. VELLOUISH-TAU.	W220			1. 38.9 - 39.9
1-	KO-110	,			2. 46.7 - 47.7 3. 56.5 - 57.5
=	CARMELL SOUNVIC	- 2 w			
=	CRS SAUD), CLAYEY, MOIST, BROWN. GRAVEL 1/4 - \$/8"				WEATHERING:
20-	GRAVEL 1/4 - 5/8				MATE SI. WEATH TO
}	LLAYEY SAND/SAND	- 1	00		
	MOUST MED. PUSTY 2	au			NOTE:
=	24.0-1.90 CLAY: SAWDY MOIST STIFF- STIFF, BUSTY TO SOME LT. GEAY INCLUS				SHALE IS HEHLY EXPANDABLE FROM
1 =	STIFF- STIFF BUSTY T	100	,		360'-400'
1 = 1	SOME LT. GEAY MICLUS	ION		1	
	29.0-35.0	110	,		
3	CLAYEY SAND SANDY MOIST, SOFT, RUSTY TO WITHACL OF LT. GRA	ON!			
30 =		1	1	ı	
30	35:0-36:0 GRAVEL				
1 = 1	V.CLAYEY, SAUDY, V. CLAY FRACTION SOFT YELLOW- BROWN GRAN TO + 11/4	more	7		- 1.1
1 4 1	YELLOW - BROWN GRA	VEL			
]]	360-59/		\neg		_ STARTED G'CORE
	SHALE: FISSLE, TWA LAMINATED, STIFF- U.S. MOIST, BLUE-BLACK. 37.0-39.5 THIN LEW OF SAND.	VLY	37.0		AT 35.0
	MOIST, BLUE-BLACK	777,			
10	OF SAND.	355	0.2		
10		١.	40.7	1	
	37.6' to 37.9' - LIMESTONE, sandy, HARD, crystalline	. [1		
=	HARD, crystalline gray.		0.0	-	
			13.0	ı	
	Thin beds of SAND located &: 40.1' to 40.8' -	217/3	6.2	3	
12	HARD, Tine-grained	1,	TU .C.		
	pyritic.		L. 1.5		
50.0	calc., drkgray, pyritic. 42.3' to 42.8' 50.0' to 50.2' 55.0' to 55.2' 56.0' to 56.2'				
	56.0' to 56.2'	ř	50.2		
	Thin beds or modul		0.0	4	
	of SILISTONE local	100	52.9		
	HARD, conchoide?	. 1	1.5		
	HARD, conchoidal fracture, it. tan. 46.0' to 46.2' 47.8' to 47.9'		6.3		
3	fracture, 1t. tan. 46.0' to 46.2' 47.8' to 47.9' 50.7' to 50.8' 51.3' to 51.8'	۲		5	
		- 1.	0.0 9.1		
60.0	T.D. 59.1'	۲	7,2		
60.0	res. 33.1				
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		DRII	LING LO	oc C	Southweste:
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	1				
	4. 110		CALLER	- 4	ps of Engineers
	6. Di	RECTI	0+ 0F HO	. 2	ones
	7 7		11CAL []		TH 30 ET
	6. DE	-	# LLED 1	TO POC	* 1.0' 33.5'
	SLE:	ATID	DEPTH	LEGENE	CLASSIFICATION OF
	-	•	†- <u>`</u>	•	
			1 =		0.0' to 28
			=		0.01 to 4 51
			1 3		Calc., some med. to stif tree roots,
			=		4.5' to 6.0'
			=		4.5' to 6.0' Sli. sandy, stiff, sli. moist, calc. brwn. to drk
1			=		brwn, to drk
			Ξ		6.0' to 16.0
					6.0' to 16.0 311. sandy, hard, calc., stiff 2 7.5'
			=		moist, becom moist @ 12.5
			且		16.0' to 25.
			=		Sandy, calc. med.to stiff
			=		Becoming '
			10.04		25.0' to 28.0 Sandy, calc. med to stiff
					med to stiff limy nodules carbonaceous
					carbonaceous yel.brwn.
			E		28.0' to 3:
			를		Gravelly (fil
1			=		Gravelly (fin clayey, satur loose to med yel.brwn, cal
			=		
ı			3		32.5' to 31 CLAY
1	48	9.0	3.27		(Clay-shale),
۱			를		gray
١			=		T. D. 33.5
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		201	#ITTE0	BY:	

SITE D	II MANUFACTURER'S DE	TOR SHOW A PARTY OF THE MENT OF THE PARTY OF			Aquilla Aquilla	IS DATUM FOR ELS	OF BIT 8"/U. OF	4
TOO OF DECLET DECLETORS OF SEA FROM YEAT.	14. TOTAL NUMBER COR 15. ELEVATION SHOUND 16. BATE HOLE 17. ELEVATION TOP OF 1	E BORES 5" WAYER # WASHER P DEC '72 15 DEC '72 MOLE 535.5	6. M	RILLING IGENCY DLE NO As absoluted fine numbered with the numbered with the numbered fine numbered	Jones	19. TOTAL NO OF COMMENCE NEW TOTAL NUMBER 18. ELEVATION GROWN BOTTE NOLE	CORE BOXES O DUND WATER ## 187ARTED COMPLETE 19 Jan. 73 :12 Jan	0 73
DRILLED INTO ROCK 13.1	M. TOTAL COME RECOVE	ERY FOR BORING PP	7, 71 a. Di	PTH DRILLEG INTO	HOCK 1.05	19. TOTAL CORE RE	COVERY FOR BORING	
	S CORE BOX O	DE (Delting Stee, more been, stepth of	0. TO	VATION DEPTH LE	33.51	7 11	STH. DIW-	
ESS OF OVERBURDEN 36.0 ORILLED INTO ROCK 13.1 DEPTH OF HOLE 59.1	17 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	ERY FOR BORING 88 4	48	9.00 15.00	under 32.5' sect 1.0' to 28.0' CLAM-CATION OF MATER O.0' to 28.0' CLAM-CATION OF MATER Calc., some sand med. to stiff, m tree roots, drk. 4.5' to 6.0' Sli. sandy, rate solt, becaling to 7.5', all molet 0 16.0' Sli. sandy, rate solt, becaling to 7.5', all molet 0 16.0' Sli. sandy, rate solt, becaling to 7.5', all molet 0 16.0' Sandy, calc., solt sandy, calc., solt solt 0 16.0' Sandy, calc., solt solt 0 16.0' Sandy, calc., solt molet 0 16.5'. Calc. Co. to 26.0' Sandy, calc., solt molet 0 16.5', all molet 0 16.5' Sandy calc., solt carbonaccous file yel.brwn. 28.0' to 22.5' SAND Gravelly (fine to clayey, saturated loose to sed. con yel.brwn, calc. 32.5' to 33.5' CLAY (Clay-shale), sar moist, sli. calc, gray T. D. 33.5'	crains, olst, foots, for the toes roots, manual to to to to to to to to to to to to to	19 Jan. 73 12 Jan POFHOLE 5.5.3 REQUERY FOR BARING WIFELTOF	was T: -73
836 PARVIOUS EDITIONS ARE OBSOLETE	PROJECT AQU2	lia Dam - D BAGC-3		DESIGNED BY:		AQUILLA	SINEERS	
				CHECKED BY:	ε	A6C-I, 2,	F BORINGS 3 AND 84-4 DACW 63-50-8-0085 DA	TEO: AUG.198
	REC	ORD DRAWING-WORK		ENGINEER:	L FOUNDATION	CONTR. S DRAWING	10. DACWG3-8C-00	NO. 10

DISL	LING LO	•	Southwestern	M. MIE	Fo	OF MY	Melo Ne.8A6C-5
	Conven	ree or he	Aquilla				S"Auger 6"Core
	AGENCY		Site-D		-	14-0	SHATION OF BAILL
E NO	(As above	Corps	of Engineers		E HE LOS	CS TAKE	0 \$
WE 04	DAILLER	3	8A6C-5	14. TOT	ATION SR		MOKES 8
	6 OF HOL			M. DATE		1074	an, 73 9 Jan, 73
	S OF OVE				ATHON TO	P OF HO	u 537.4
PTH 0		70 #0CH	44.6	10. TOT	TUNE OF	Topic	y FOR BONNIE 88.2
_	-	_	CLASSIFICATION OF MATERIA	LS	T COME RECOV-	BOX OF	PRINTED STATE OF STAT
•		•			2RY	HO.	-
	=		0.0' to 5.4'				1. 30.0' of plastic
						Α	1. 30.0' of plastic pipe put in hole water level 19.05
	11		0.0' to 3.5' Some sand grains, stiff, moist, drk	med .	-	-	12 Jan. 73
	1111		to bir.			В	2. JARS:
2 /	-	(3.5' to 4.9' Sli. sandy, v. st hard, sli. moist,	100 +			2. JARS: A. 0.0' to 3.5' B. 3.5' to 4.9' C. 4.9' 5.4' D. 5.4' to 10.0'
	111	7				D	C. 4.9' 5.4'
	3	ζ	4.9' to 5.4' Sli. sandy, stiff stiff, sli. moist				20 30. 20 2010
	10.0	*	stiff, sli. moist	, ·	10.01		3. CARTONS:
	=	G,	some care. Rocare	••	0.6		1.11.3' to 12.3' 2. 17.0' to 18.0'
			Augered into pr	imery	13.01		3. 23.7' to 24.7' 4. 29.4' to 30.4'
	=	\rightarrow	.43. to 14.01				5. 36.5 to 37.5 6. 43.2 to 44.2
	1111	3	SHALE)	L. 2.5	1	6. 43.2' to 44.2' 7. 51.7' to 52.7' 8. 57.5' to 53.5'
	-		E A! +0 10 0!		17.01		8. 57.5' to 58.5'
	=	2	Sandy, dry-sli. w	wn.	L.		4. Shales weathered
	=	7	10 0! to 14 0!		0.5	_	to the consistant of a clay-shale to 39.01.
	50.0	=)	Sandy, sli. fissi moist, v. stiff,	calc.	20.0		to 39.0'.
	=	(yel.brwn.		L. 0.5	2	
	=	,	14.0' to 14.3'		0.5	2	
	=	€ 3	SANDSTONE		24.01		
	=	7	HARD, calc., thin bedded, fine-grai	ned.	G.		1
	-	::(:	C9		0.7	7	
	=		4.3' to 14.7'		28,01	3	
	= =		V. stiff, calc, m	oist	1		
	30,0	74	yelbrwn.		0.5		
	3		14.7' to 15.0'		32.01		
	3	-5	SHOT ELIA			4	
	-		HARD, thinly bedde fine-grained, gray	d,	L. 1.0		
	=		line-grained, gray				
	=	र्भह	15.0' to 47.5'		36.5		
	-3	13	(Clay-Shale)		0.7	5	
	=				39.01	_	
	=		35.0' to 28.0'	'	L.		
	_=		Some sandy lenses seams of Fe stain	, thi	1.1		
	=	16	V. BULLIA MOLBU.	CETA *			
	=	ĺ	fissile, interbed	eđ 💮	G. 0.7 45.3		
	=	5	yel. & gray shale	•	G.		
	=		28.0' to 39.0'		0.5	•	1
	=	2	Interbeded gray s lehses & blk. sha	andy	49.0		
	50.0	11111111	Interbeded gray s lenses & blk. sha thinly bedded, v. to harder dense,	stif soist			
	=	= = =	Note:		L. 0.8		
	1 =	17	Gendatone he	ds or	53.01		
	=	1111	lenses locat 27.0' to 27. 33.0' to 33. 33.5' to 33.	3'	7		
	=	-	33.5' to 33.	raine	, ö.s	•	
	اِ ا	TIAN.	thinly bedde		y		
	1 =		Siltstone be	ds or	57.01		
	=	_ [8	Siltstone be lenses locat 28.6' to 28. 29.1' to 29.	7'	0.7		
	60,0	···	HARD, concho	yası	60,0		-
	=		fracture, ta	ri •			
	1 =		39.0' to 47.5'				1
] =		39.0' to 47.5' Some w. thin sand interbedded, hard moist, drk.gray t	, fis	110,		
	=		moist, drk.gray t	o blk	1		
	-		47.5' to 60.0'				
	=						
			(consistancy of w				
	-		Clayey, moist, fi	ne-			
	=		sh. seams, Thin c seams to 60.0', m seams from 51.7'	arbon	ac eou		
			seams from 51.7	to 54	۰۰۰.		
	1 =		drk. gray Limy beds or lens located &	•=			
	=		located & 54.5' to	55.7'			
			54.5' to 56.8' to 58.0' to	5740°			
] =		Mod hard, wht.	sand			
	=		T. D. 60.0'				
	1 -				_		1

PROJECT		_	SWD		E	/D	SAGC-7
Acui	LAL	ALT.	THE WAY & ENGANCHENT				· Charles Philippine
MILLION Jerra	MARIETY	, .	Y: 86,48=		Alle	15	PP COLL
	<u> </u>	~ ~	BACC-7	12. 707	4.7.	A B TAN	BIOTORNES CHISTOTORNES
	500 LEA	W.		IL ELE	MOTTAV:	an cond	100105 3 4 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6
23 venv	HM. []	mer met			E HOLE		9 June '78 28 June '79
BEPTH B	MILLED I	174 90 ÇI	4.5' '26.5'	ts. YOT	AL CORE	RECOVER	Y FOR COMME 76 1
TOTAL O	EPTH 07	HOLE	CLASSIFICATION OF MATERIA	5	150	P	The second
64.2			2 2 2 2			0.0	
	Ξ		CLAY: SANDY: STIFF;	Mois	7.	1	B' FUGHT AMER:
	Ξ		 			A	6. Cume Encort:
	=					1	6.8' - 31.0' Abort Ser 8' Counc
	=						
	3.5	-	3.5 TO 4.0' CLAY: V. SAMAY; V. STIP MOIST; W. CALLOW STA	, ,		3.5 4.0 F3	TI SAMES: DISTURBED (JACE)
54.7	1.5			THE		F3	A: 0.0' - 3.5' 8: 3.5' - 4.0' C:4.0' - 4.5'
	1 1					_	D. 4.5 - 6.8
	크		4.5 To 9.8	ed wer		D	UNISTURBO (CAETON) C-1: /4.0'-/7.0' 2: /8.5'-/9.5' 8:24.3'-25.3' 4:29.3'-30.3'
	=		V. MOIST TO SATE; AM	175	4.8	6.8	4:29.3' - 50.3'
	=	[CARI, SUMP, ERMELLY (3), MOIST; STUMP; RJ 4.5' TO 9.8', AND: FING TO MED. 6. 4.0'; LANGE TO SATD; MA 6.0'; LANGE TO STAILLE RUST TOWN RUST TOWN RUST TOWN	AKLY	D: 65		III. WATER LEVEL:
			HOTE: LOST 7.2'-9.8'		L: 2.7		III WATER LEVEL: "BRENK BALLED TO 275' W 28 June 75;
	크						27 S' W 28 June 75; 4"REF. PLASTIC PURE WAS PLACED TO 30.9; WHITE LEVEL WAS S.2" AFTER 24 HES.
54,4° 58,9°	7.8	:::]	9.8' TO 10.3' UNESTONE SONDY, MA		9.5		S. 2' AFTER 24 HES.
8.9	10.3		LINESTENDE: SANDY, MAR LT. GLAY WHITE LO. 3" TO LS. C. SANDSTONE & SANDY SA SOFT, MOIST, WER. TO RUST DOWN TO 15.0" 17; GLAY FROM 15.0" 2 7; GLAY FROM 15.0" 2 7;	. ALPO	D: 4.5		
	1	ΑĦ	SANDSTONE & SANON SIN	ALE:	R:2.0		
	=	'n	RUST DOWN TO 15,0'E", GRAY FROM 15.0'E TO 1	5.6.		Box	
			Norg: Laur 11.8'-15.0"			-	
	=				13.6		
	7				D:4.		
				- 1	R: 2.2		
18.6	15.6	n bed	SHOE FISSIE, MOST;	5057	Réc To		
	=	2	Had-CALC.; WWWA.; WY SI CLAYSYME STAME; WI SCAT	AT:	17.2	1	
	킄		SHORE FISSILE, NO.ST; " SHORE FISSILE, NO.ST; " HOW! CALC.; WHINER; WY SI CLAYSTONE SHOW; WI SCAT FRAC.; DK. GRAY BLK. 17.2's FRAC.	-		4	
	=			ı	17.5	ارمرا	
	=	-			D: 4	2	
11 2	=				~.43	4	
	* ‡		20.5' CLAYSTONE LA	ws	REC.		
	=	3.5	21.5'-22,2': VEET, F		21.5	Box	
	3	1		- 1	2/. 8	2	
	直	-			D:4.8 R:5.1		
	3				REC		
	1		24,5' CLAYSTONE		To 26.6	24.2	
	4		25.3': FRIC.		20.6	3	
	1	127					
	=		and at the	1	26.6	,	
	7		27.4' - 27.6': CLAYS	-	D: 4.4	Box 3	
	-		28.5'-29.1' SCAT.	45.	R: 4.3 PEC.		
	=	1	FRAC. WI CLAYS		30.4		
,	. 1					4	
	1	7	and a mine		_	4	
3.2	U.e.	E ^{ty}	309 Sirry	1	31.0	30.9	E
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FORM 1				-	PORCY	LA LA	12 1846 - 7

Deu	LING LO	- I	evision C. C.	EST EL	Carrage	_	Date Da.	BAGC-7
PROJECT			SWD	16. M21	F AND TYP	D C OF DIT	6.CATALEX	OF _ BHEETS
K	74	AKT .	Y: 86, 48-	11. BAT	MSL		AMERICAN SA BOATT	
USC #	ASERCY			-				
HOLE HO			BACC-7	13. TOT	51.7LE	HYM	3	0
BANK OF				18. ELS	VATION O	M COME	TOR 544 ."	
E VERT		MEL. ME			E HOLE	2		8 June 78
V-MC					AL CORE	OF OF ING	564.2	76 .
TOTAL DE	MILLED M	ITO ROC	31.0'	1 200	ATURE &	P	M BALL	16 .
LEVATION			CLASSIFICATION OF MATERIA	4	LESS.	200	*****	es Seen, dares of
64.2	P.0 _					0.0	T. Deittick	-
	Ξ		O.O' TO 3.5' CLAY: SANDY; STIFF; RUNT ROD BON	Mois	7;		B FILENT	Aucae:
	=		(A Day Area - aces.				Cons.	BAKORL:
] =					A	Here Ser	S. Count
	=						r. 5.0'.	
	3.6		3,5' 70 4.0'			25	II SAME	1.
	3.6 (.e/_ 4.6		CLAY V. SAWN: V. STIP	, ·		15	A: 0.0' - 3.	S'
54.7	4.5		W CALC. NOWLES; RUST	784	1	3.5 45. E3	A: 0.0' - 2. 6: 3.5' - 4. C: 4.0' - 4. D: 4.5' - 6.	5
		::::	CLAY SOLDY : GRAVELLY (AMIX			D. 4.5' - 6.	Carred
	=		4.5' To 9.8	SYBEA	f	D	C-1: 16.0'	17.0
	I		V. MOIST TO SATE; HA	CAINEZ CO P	1.		2: /8.5' 2: /8.5' 3:24.3' 4:29.3'	25.5
	1		T.D. TO STORY; GRANELLY (3): MOIST; STIME; R.J 4.5 T. F. M. T. M.ED. G.I V. MOIST TO SATTO; M.B. 6.0; LAY S.S. FREMME, 8. SEAMS; MON TO WE CEMBRIES, MON TO WE CEMBRIES, MON TO WE RUST TOW, RUST TOW,	AND	6.8 D. C.C.	6.6		
	3		CEMENTED; IRON STAINS	ED;	D: 6.5		III WATER	eve:
	- =		More: Lost 7.2'-9.8'		L: 2.7		THE WATER OF BROWNE BANGER PLANS AT THE PLANS TO LEED	June 75;
	3						4" MEF. PLACED T	309
		:::[00'		9.0		WHITER LEVEL 2	+ Mes
58,4°	168		P.B. TO LO.3' LINESTENDE: SANDY, MAD LT. GRAY WINITES LO.3: THE S.G. SANDSTONE & SANDY SA SOFT, MOUST WIRL TO RUST DOWN TO IS.0'; GUAY FROM IS.0'E TO MOTE HOME IS.0'E.	à. 440G	;			
49.7	7.2		LT. GRAY WHITE		0:4.			
	=	# 1	SANDSTONE & SANDY SA	IALE:	Liza			
	三	:::r	GRAY FROM IS. O'E -	5.4		Bey		1
	Ξ		,			1		
	=	::	NOTE: Last 11.8'-15.0'					
	_=	H			13.6			
	3				D:4.0			
	3				£:2.2			
40.4	15.6	4	ISLO TO 31 O'T D. SHINE FISSIE, MOIST; NOW! CALC; WHOMA; WY S. CLAYSTUME SHAKE; WY S. FRAC; DK. GRAY BLK. 17.2's FRAC.		REC			
	-3		New CALC ; WHUER ; WY ST	CAT.	To 17.2	Н		1
	E	1	CLAYSTULE STARK; WI SCAT FRAC.; DK. GRAY BLK.			1		- 1
1	3	. 7	17.3's FEEC.		17.8			
1	-3	1.5			1.1.5			
,	=	- 42			D: 4.	18.5		1
i	=	- 1			R:43	2		
112	. =					٦		
	3		20.5' CLAYSTONE LA	Ws	REC.			ţ
	3		24.5'-22,2': VEET, F		21.5	0		ŀ
	\exists		44.4 - 44.1 : VERT. F	w.	2/.8	Box 2		
	3				D:4.8			
	-1			İ	R:5.1			
	3				REC.			
	=		24.5' CLAYSTONE	make	To	24.2		
	_=		25.3': FRAC.		26.6	3		
	3	-CITAL Junear	SHIT PARE.	Ì		4		ŧ
	=							ŧ
	E		27.4' - 27.6'; CLAY	,,,,	26.6	Box		
	3		SEAM SEAM		D:44	3		
	-		and or the state of the		R: 4.3			
	=		FRAC. WI CLAYS	Tout	REC.			
	3		SEAM!		304			
	∞ _∃					4		
	. 3	1	In it was		_	25		
33.2	21.0	.7	30.9 : SILTY		31.0	30.9		E
	=							
	3							
	\equiv				- 1			E
	3							F
	mhadanha				- 1			
J	且				- 1			F
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FORM	1836	PREVIOU	EDITIONS ARE DOSS, ETE.		PASIL	u LA	æ	BAC-7
			TRANSPORTED TO					

DESTRUCTION LO		SWD Sey way a Engagraphy			LEVATIO	G CARBOLOV
Will R				MS		
CE C				FA	LING	1500
		BAGC-8	14 701	AL HUMBS	TR CORE	вохез З
Sente			-	VATION O	100	SER REPORTS CHARLES
	LAGUAGE				OF OF HO	MAY 73 1 MAY 75
TH COLLEGE	70 BOC	19.8	10. TOT	ATURE O		122
-	LEGEN	CLASSIFICATION OF MATERIA	14	T COURT	POX OF	REMARKS OF THE PARTY OF
D. 6					000	
0.7		O.O' TO O.9' CLAY: JLI. CALC.; M STIFF TO V. STIFF: W GRAVEL; BARK BRN. TO O.9' TO 2.0' CLAY: W/TRACE OF	OIST;		0.0 0.4 8.0	T. DRILLING: 10" FLIGHT AUCER:
_		GRAVEL : BARK BEN. T	BRH	1	C	NOTE HAD AVER
2.0_~					2,0	NOTE; HAS AVER REFUSAL AT 2.0' 1%" ROCKBIT: 2.0' - G.8' G" CORE BARREL
	-	W HARD QUARTETTIC	5.3,	۲		6" CORE BARREL!
=		2.0' To 5.8'	₩.		ROCK	G.8' - 21.8'
13		MOD HARB DOWN TO	A.		No SAMPLE	HOTEL COULD NOT BEGIN CORNE BE-
1 =		SLI. MOIST; CALC.; V. WHAD QUARTETIC. SPANDSTONE; MOD. WE MOD. HARB DOWN TO S. (ANGER REPUSAL); TA. LT. GRAY SEN. (CLAS SY BELL REACTION)	SIPIE		1	OF LONG CORE BARRE
		By BRILL REACTION)			H	T SAMPLES:
5.6		SHALE; HIGHLY WEY CLAYEY; MOIST; SOFT, 4 LT. GRAY (CLASSIFI,	.;			B: 0.4' - 0.4' B: 0.4' - 0.9' C: 0.9' - 2.0'
6.8		CLAYEY; MOIST; SOFT,	TAN	6.8	6.8	B: 0.4' - 0.9' C: 0.9' - 2.0'
1 7	R.K.	FROM ROCKSIT CUT	rings)	D: 3.0		C-1: 10.7' - 11.7'
7.8		SANDSTONE: HIGHL	SOFT	REC.		MOTE: WABLE TO
3		MOIST; W/ IRON STA	HING:	9.4	Box 1	CARTON SAMPLES
=		G.B. TO 7.8 SANDSTONE: HIGHE WEAKLY CEMENTED; MOIST; W/ IRON STA W/ SCAT: THIN SHALE LT. GRAY & RUST 7.8' TO 16.3'	.ru, 114	Γ'	-	IN THE SOFT MATERIAL
w <u>=</u>		LT. GRAY & RUST 7.8' TO 16.3' SHALE: NON-CALC.; TO MOD. WEA.; CLAYEY SLI. FISSILE; W/ IRON WEA. ALONG BEDDING P	SLi.	9.8		
1 3		SLL FISSILE; W/ IRON	STAIN	D: 4.0		
1		W/ SCALL SAME C ACK				
1 3		CEMENTED SANDSTON PARTINGS & BLUE GRAY W RUST Y	LT	REC.	. 5	III WATER LEVEL:
1 3		# PURPLE.	LLOW	13.6	12.7	WATER LEVEL: "BORING WAS BAILED TO 21.2" ON 1 MAY. 2" PARF, PLASTIC PIPE
13		15.0 - 16.5 SAVAY	S.S.			WAS PLACED TO DEPTH OF 21.8' WATER
1 4		-		13.8		LEVEL AFTER 24 HRS. WAS 14.7'
	2"				Box 2	WAS 14.7.
1 3	-	Sorre: Han Partial Los		D: 4.0 R: 4.0	_	
1.3	-3	BRILLING FLUID IN COR	e Rud	REC.		
46.3		SANDSTONE WE	ATH.	17.6		
1		WEAKLY TO MODERAT CEMENTED; MOIST; S W/ABUNDANT IRON S	ELY		17.3	
13	Πİ	ing; W/OCCAS. THIN SHALE PARTINGS; R	TAIN-	17.8	17.3	V-5"
1 3		HOTE! LOST CORE FR	DH	D:4.0		
1 =		HOTE: LOST CORE FR. 17.6 -21.8 COULD RECOVER. WAS Possi	SLY	Rio.o		
20.0	:::\	V. WEAKLY CEMENTED OF TAND & WAT WATHER MOTE: MATERIAL WE TO T.D. 21.8;	AWAY.	17.6		
1 =		To T.b. 21.8:				
21.0						
-	,	T.D. 21.8		21.8		
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1. PROJECT	ING LO		SWD
A BRULLING	AGENCY	ARE .	SPILLMAY & EMBAI
USCE	(As and		GDC-
G. Sch	MILLER MI	ER	
-	. 0	HELM	
BEPTH DR	ILLED H	TO RO	** 4.6'z * 25.4'±
LEVATION		LEGEN	30.0°
•	9.0		O.O' TO O.T CLAY: W/SCAT MOIST; V. STI DARK BRN BLI O.T' TO 3.0
	2.7	_	MOIST; V. ST
			CLAY: CALC. W
	=		
ľ	.0.		3.0' TO 4.6' CLAY: W CALL CALC.; MOIST; EWHITE
	· 6' =		SHALE: MOD.
	크	We .	PARTINGS; MO MOIST; SLI. FI SS. SEAMS, LEN BRN RUST & L 16-4.7: Sc 5.1'-5.3: Sc 7.7-7.8: IR
i	3	5	Moist; SLI. FI SS. SEAMS, LEN BRNRUST & L 4.6'-4.7': Se
	1		5.1'-5.3 Sc 7.7'-7.8': in
]		1
,	,		9.0': SOFT ! 9.3'-9.1': SO 9.8'-10.0':CO
	1		HAR GRA LT. 10.6'-10.8': M
	1		11.6: SOFT S 12.0 - 13.1: S 12.5 - 12.6: M 12.8' - 12.4: N
1.	3.4		12.5'-12.6' M
4	٠,٠		LIMESTONE :
	=		
4	5.1	Ş	SHALE: WEA .;
	4		
	4		
	=		WEAKLY CEMEN CEMENTED; MOI LT. GRAY
1	8.2		15 1 - 15 1 M
	크		18 2' 10 28
h	[ان	2	182 TO 28 STATE TO UNIVERSE WAS A MOIST; NON-CA
	4		LAMINATIONS & P MOIST; NON-CA SOFT; RUST TAH,
	1	100	SPURPLE DOWN T
1	1	5	18.2-21.2'
	3		20.0 -20.2
	=		21.3'-214': 21.9: SOFT 22.7': 22.9'-23.1': 25.4'-24.2':
	-	4	25.4 - 24.2
	-		24.2 - 25.2 : 25.1 : Pyrin 25.1 : Pyrin 25.2 - 25.6
	1		25.6'-28.2'
	1	_	SHALE I
21	. 2		SAND/ S. 4 Lense 28,2' to 30.0
	三		SANDSTONE: L
24	20		CEMENTED; MOIST PARTINGS: LT.GRA 28.2'-29.3': SH T.D. 30.0'
1	Ξ		1.0. 30.0
	긤		
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-	쿠	-	
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SY	M 0.0		S. ARMY
	F \$10 W		
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-	RAWN	87:	
-	HECKE	D BY	
	VENIT		
	-		

DEILLING LOG SWD	MISTALL	FWD		SHEET I	1			
QUILLA LAKE - SPILLMAY & EMBANKMENT	M. SIZE	HO TYPE OF	THOSE SHOWN CAR BO	PDX				
AILLING AGENCY	IE MANUE	MSL	DEMONATION OF DRILL		1			
SCE - C.	IL TOTAL	13. TOTAL MO. OVER. I DISTURGED UNDISTURGED						
GDC-9	14. TOTAL	ATION CHOW	HE BOXES 5		1			
SCHOONOVER RECTION OF HOLE EVERTICAL MICLINED DEC. FROM VERT	16. DATE	HOLE	BYANTED 2 MAY 73	3MAY				
HICKHESS OF OVEROUNDEN 46'+	17. ELEV		HOLE 592.3		1			
STAL DEPTH OF HOLE 30.0	19. SHEHA	TURE OF HELD	ecues -	85.				
VATION DEPTH LEGEND CLASSIFICATION OF MATER		COME BOX	OR (Brilling than to	ARKS over lose, depth of				
0.0 10 0.7	-	. 0	0		-			
MOIST; V. STIFF; NO	V-CALC	ف	LO" FLIG	SHT AUGER:	E			
DARK BRH - BLK.		E	G'DEN	- 2.6' ISON BBL.: - 5.3	=			
CLAY: CALC. W CALC. Sti. Moist; V. STIFF;	BSH - TA	S;	NOTE:	IAD DENISON	E			
3.0 To 4.6' ±			9 7/8" R	CKBIT: - G.8' BARREL:	E			
CLAY: W CALICHE PE	AT; TAN	V. STIFFE DE	6" COR	- 30.0'	E			
		1.						
SHALE: NOD WEA!	W/ IROW	15.		D (JAKS):	E			
Moist; SLI, FISSILE;	W/SCAT	Bir	B: 0.7 -	2.6	Ξ			
- MISS SEAME LEGISLE & P		G.B	MODISTURBE	D (DENISOH):	E			
BRN. RUST & LT. GRA 1.6 - 4.7: SOFT SS. 5.1 - 5.3: SOFT SS. 7.7 - 7.6: iRon STP	,	:3.0 Bc	UNDISTURBE		_			
7,7-7.8 : IRON STA	1.0	7:2.6 1		2'-21.2				
	7	REC. 16 9.4	П	-20.6	Ē			
9.0': SOFT 55.			III WATER	15/51	<u>-</u>			
10 9,8'-10.0' CEMENTET	L.5 : 10	9.8 D.	"Boring B 23.4 on 3 2" PERF. PI PLACED TO WATER LEV	AILED TO	=			
HARD, DENS	JOINT,	2:4.0	2" PERF. PI	LASTIC PIPE	<u> </u>			
GRAINED, W.			WATER LEV	EL AFTER	-			
					Ē			
11.6': SOFT S.5. LENS 12.0'-13.1': SCAT, SAN 12.5'-12.6': MOD, HAR 13.1': MOD, SOI	RD 5.5.				<u> </u>			
LIMESTONE MOD WE		3.8 Bo			=			
FOSS.; MOD. HARD; LT. GI	MY				_			
Tea 140 to 151	SSILER	:4.0			_			
					=			
	.s. 1	G.B	3.		-			
WEAKLY CEMENTED TO	MOD.	17.5						
THE SKAY	1	28 Bo	ĸ					
18.2 15.1 1.1 MOD. CEME! 15.1 - 16.2 WEARLY CE 5.5. Rusy C	HENTED R	1.0 3			-			
11 16.2 · 18.2 : SIMLY See	T S. S. 17	7.8'-			_			
18.2' TO 28.2'	I.	7.6			-			
TO UNIVER : WASCAT S.S.		EC. ROM 9.8	2					
MOIST; NON-CALC., FIE SOFT; RUST TAN, LT. BLUE FRURPLE DOWN TO DARK	GRAY	21.8 BO			=			
BLK. W/ LT. GRAY PART	INGS D	15 3	`		_			
16.2-21.2' W ABJUIT SAND 55 MOTING 20.0'-20.2' MOD 50	FT SS Z	EC. 70	2		-			
213-214 SOFT 6	- In-	2.5						
211: SOFT 5.5 22.7: 22.9-23.1: SOFT 5.	R	2.G			<u>-</u>			
23.1 -21.2 STAINED	TIGHT 2	5.6 Box	NOTE: BASE	OF WEA.	_			
24.2 - 25.4 PYRITE	LAKES 2	5.8	-	E				
25.1 Pyrite Lens 25.2 - 25.6 Mod. S 25.6 - 28.2 DARK 6	OFT SS.D:	4.2	3	Ė	=			
SHALE INTERBEE	DED R	4.1			-			
SAND/ S.S. PART		9.7	1	E	_			
28.2 TO 30.0 T.D.	SOFT	29.	2	E	:			
PARTINGS: LT. GRAY W DAR	K GROW	5		E	-			
30.0 ZB.2-29.3: SHALE PM	TINGS 3	29.	4	Ē	Ξ.			
3				Ė				
mhunhun				E	:			
=				Ē	-			
3				E				
				E				
1 1			<u> </u>	E	<u> </u>			
SYM DO NO ACTION DATE		Ó	SCRIPTION OF RE	VISION				
U.S. ARMY ENGI		DIST	RICT, FO		тн			
		OF EN	SINEERS TEXAS					
DESIGNED BY:			-					
			LA LAKE CREEK, TEXA	s				
DRAWN BY:	A	-UILLA	OHELK, IEAA	-				
	ABANI	KMEN	T AND SPI	LLWAY				
CHECKED SY:								
			F BORING					
	8460		8 AND 6D					
SUBMITTED BY:			DACW 63-80-B-					
		CONTR.	NO PACHGS-E	bi-c-0035				
ENGINEER:		DRAWIN	NUMBER	SHEET NO	107			

TO ACCOMPANY FINAL FOUNDATION REPORT

S BUILT

II. LING LOG SWD	M. HZE	FW	D	Holo Ho. SAGC Index of Succession Annual States	
LAKE-SPILLWAY & EMBANKMENT	TI. BAYO	MS	EVATION	Thom Pile 2 lab 2	
A LENCY	MSL IF NAMUPACTURER'S DESIGNATION OF BAILL FAILING 1500 13 TOTAL NO. OF OVER. BURDON HAMPLES TAREN 13 TOTAL NO. OF OVER. 13 TOTAL NO. OF OVER. 14 TOTAL NO. OF OVER. 15 TOTAL NO. OF OVER. 15 TOTAL NO. OF OVER. 16 TOTAL NO. OF OVER. 17 TOTAL NO. OF OVER. 18 TOTAL NO. OF OVER. 18 TOTAL NO. OF OVER. 18 TOTAL NO. OF OVER. 18 TOTAL NO. OF OVER. 18 TOTAL NO. OF OVER. 18 TOTAL NO. OF OVER. 19 TOTAL NO. OF OVER. 18 TOTAL N				
POPULLER			-	3 0	
IITS TOM OF HOLK	IR ELEV.	ATION G	TE GHUOS	TER SEE REMARKS COLUMN	
HELS OF OVERBURDEN 4.9"	17. ELEV.	ATION TO	P OF HO	MAY 73 : 4 MAY 73	
MILLED INTO ROCK 21.9	19. NGHA	TUREOF	INSPEST	or Italia	
OH DEPTH LEGEND CLASSIFICATION OF MATERIA	11	COME RECOV-	BOX OR	REMARKS (Drifting town, wasterned or occordating town, waster town, depth and occordating, occ., if offsettened	
0.0' To 2.9'	-	EAY	0.0 A	T DRILLING:	
CLAY: MOIST; NON - C	ALC.:		é.a	10" FLIGHT AUGER:	
BLK. DOWN TO BARK BR	tel.		В	Morros - Man Augus	
			_	4.9' - 6.8'	
CLAY: CALC. W CALICHE	Port	~	2.9	REFUSAL AT 4.9' 978' ROCKBIT: 4.9' - G.8' C' CORE BARREL: G.8' - 2G.8'	
SLI. MOIST; V. STIFF; TA	W- BRH		С	CORE BEFORE G.8 BE	
				CAUSE OF LONG CORE BARREL.	
4.9 TO G.2	FT TO		4,9		
(NOTE: LOSSED FROM			\$ 15.	II SAMPLES:	
S 6.2' To 7.3		6.8	No Sampuro	II SAMPLES: DISTURBED (JANS): A: 0.0' - 0.8' 6: 0.8' - 2.9' C: 2.9' - 4.9'	
7.3 SHALE HENRY WEAR C. 7.3 SMOIST, SOFT; CALC., RUS. 7.8 7.8 7.8 7.8	T TAIL	D: 4. o	5	C: 2.9' - 4.9'	
7.8 7.8 7.8 SANDSTONE SLI WEAL	· ON CO.	R: Rec.		C-1: 12.1 - 13.1 2:16.6' - 17.6	
QUARTRITIC; JOINTED; MC	DA. 17	10.5		NOTE: COULD NOT OB -	
TATO 19.3	DOWN	LOST 7.8'-		SAMPLES DUE TO BREAK	
WISANDY SEAMS & S.S.	SEAMS:	9.4'	Box 1		
SOFT; MOIST; ESS. NON-	CALC .:	10.8	1		
LT. BLUE GRAY		D: 4.0		M WATER LEVEL:	
5 7.8 - 13.9 SANDY 11.9 - 13.6 SOFT S 13.6 19.3 CF BAUE 14.5 15.2 FRAC. S 5 S 19.1 - 17.3 DEPARTS S 5 S 5 S 5 S 5 S 5 S 5 S 5 S 5 S 5 S	GRAY	R:4.3 Rec.	Γ.	*BORING BAILED TO 21.0 W 4 MAY 73. 2 PERF PLASTIC PIPE	
18.3'-18.4' LT. GRAY	SOFT	To 14.8	1	WAS PLACED TO 23.5." BORING HAD CAVED IN AT 23.5 W NO FREE WATER ABOVE CAVE-IN.	
19.1'-19.3' PURPLE	RAD		13,9	WATER ABOVE CAVE . IN.	
]		14.8			
1 1 4 4 4			Box		
<u> </u>	יו	D:4.0 R:3.7	2		
	1	Rec.	_		
1 3 1		18.5	2		
i i i i i i i i i i i i i i i i i i i		18.8	18.8		
19 3 19 3 TO 26 8 T.D	VEA.;	D:+.0			
TO G.B.T. ANDS FROM: MOD W. ANDS FROM: MOD W. ANDS FROM: MOD W. ANDS FROM: MOD W. ANDS FROM: MOD W. ANDS FROM: MOD W. ANDS FROM: MOD SOFT TO MO	SCAT.	2:3.1			
SOFT; TAN TO LT GRAY	w/	REC.	Box		
19.6'-20,1: CEMENT	ED .	21.6	3		
Wy SHALL SCAVITIES 21.5'-22.3' CEMENTE		22.8			
	incol .		23.5		
STAINED S		0.4.0 R:4.0	Box		
22.3 - 25.4 MEARLY OF SOFT SHALY CO. 25.4 - 25.6 CEMENTED SOFT SHALY	5.5.	REC.	4		
	5.5.	25.6	25.6		
HOTE: WEA TO T.D. 26	.8'				
T. 26.8	-	26.8			
=					
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1 = 1					
1 = 1					
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<u>E</u>					
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30					

PRILLE			SW0	m bit	FW	0	National BAG
SMITT	LAKE	- SP	LLWAY & EMBARKMENT	PT. 30271			SHATION OF SAILC
JSCE - C	etucy				EAN	LANC	1500
HOLE NO 74		****	BAGC -11		-	ES TAKE	3 0
	ONOVE	R		M. ELE	ATION SA	-	SEE REMARKS COL
SVERTICA.				17. ELE		7 ar Ho	MAY 72 SMAY
	LED MTO	ROCK		10. TOT.	AL CORE R	HEPEC	y Fort boress
TOTAL DEP	TH OF HOL		CLAMPICATION OF MATERIA	14	ac L	BOX OR	DEMARKS
. 1	.0.	•	0.0' To 5.3	V	MAY	0.0	I. DRILLING:
	=		CLAY : MOH - CALC. , MO				10 FLIGHT AUG 0.0' - 7.0' 6' CORE BARI 7.0' - 51.0
	3		BLK. DOWN TO BRU. 9.9 - 2.4 Dr. BRU. 2.4 - 5.3 BRU.	uk.		A	6" CORE BAR
	=		2.4'-5.5' BRH			2.4	MATE : BORNE V
	4						SPILLWAY CENTE FROM ORIGINAL
	=					В	CATION.
	=						II SAMPLES:
	1	_	5.3' To 6.9'			5.3	A: 0.0' - 2.4' B: 2.4' - 5.3' C: 5.3' - 6.7' D: 6.7' - 7.0' C-1: 10.1' - 11.8
	=		5.3' TO G.9' CLAY: W/ TRACE OF SA V. MOIST; SLI. CALC., S'	ND;		c	D: 6.9' - 4.0'
4	,,]		G. 9' TR 17.1'			G.9	2:13:7 - 23:7
		4	SHALE: HIGHLY WEA.; CLAYEY; WYSMALL CALC.	CALC.			4:31.4'-32.3' 5:38.2'-37.2' 6:46.0'-47.0'
	-	-	E POCKETS; MOIST; SOF SLI. FISSILE; WY SAUBY S WIRON STAINS; TANE L	T		D .	III. WATER LEVEL
	三		WIRON STAINS: TANE I	T. GRAY	1.0	9.0	BORING BAILED
	. 1		TO LT. BLUE GRAY G.1-100 CALC. W. 12.5-17.1 W. SCAT. STOLE PO	SILT-	D:2.8 R:2.3		WATER LEVEL W. 5.5 AFTER 24 HI BORING WAS LEFT
1			14.2' STAINED THENT	JOINT.	To	Г	FAC E-LOGGING BE HAD CAVED IN AT ON IT MAY, 4" PE
	-	46	PURPLE S	RMAKS	11.3	1	PLASTIC PIPE WA
	1				11.5	Box	PLACED To 12.0
		7			D:4.0 R:4.3	1	
	-5				REC.	2	
	4	4			15.6	L	
	3	5					
	3	4			15.8	15.6	
	=======================================				D:34		
	S	- 4	17.1' ro 25.6"		R:3.0		
	" <u></u>			HOIST;	18.6	Box 2	
		3.1.1	CALC.; TAN & LT. GR 17.1'-17.7': CEMENT	AY ED	20.0		
	4		17.9' - 18.3' SANDY CO	AY 33	192		
2	08		18.3'-21.6' COFT S	5			
	7:		20.6'-23.5' SOFT	OFT	D: 4.6	20,6	-
	1		SHALE, W/ KEY/	and and	Rec.		
	-				23.5 LOST 20.6		
	3				21.6	Box 3	
	=				23.6		
	3				b: 3.0		
	===				Rec.		
2	5.6		SHALE: MOD. WEA. DO	WN TO	26.8		
		Ę	25.6 TO 30.3' SHALE: MOD WEA. DO UNWEA. HON-CALC.; F SOFT; MOIST; W/SCA' SS. LEWERS & PARTIE DARK GRAY BUK. 25.6-25.8; W/	T. SAUTO	26.8	26.4	NOTE: BASE OF
		*	DARK GRAY BLK.	es;	b: 2.4 R: 2.4	[-	AT ZG.8
-		==	STAIL	ts	Rec.	3	
		****	29.5'-28.7': SOFT	S. S.	24.2	Box	
			29.7'- 29.8': SOFT	5.5.	D:4.6	4	
3	0.3		SANDSTONE: UNWEA:	Nou-	RI4.6		
	1	Ħ	SANDSTONE : UNWEA; CALC : SOFT ; MOIST ; I WEAKLY CEMENTED; BA	SHALT;	Te 33.8		
	=======================================		GRAY			4	
	#	3.0				12.1	
	1	NICO.				Box	
	minne	Special period (1911)			33.6 0:2.6	5	
	13	100	34.6': Liching MAT		R: 2.5		
3	1		35.1'TO 51.0' TE SHALE: UNWEA.; HOU- FISSILE; SOFT; HOIST;	CALC.	36.3		
	4	erij	GRAY. 25.2'-35.3': SUTSTON	Contr	36.4	36.3	
	=		25.2 35.3 Sktston 36.1 36.3 Company 36.2 Swidy Parting 37.4 32.4 Sktston 37.4 30.7 Trub West Trub Yes	Let S.S.	D: 2.8	Box	
	1		37.4'-39.4' SILTSTON	CONE.	Rec.	6	
	目		TIGHT JO 38.2" SILTSTONE LAN 38.8" TIGHT JOINT	1175 1175	34.2	L	
	=		38,8": TIENT JOINT		39.Z	5	Į.
	コ						1

MILLIA LAKE - SPILLIANY E FORM MICHAELY SRILLIAN A SERVEY SEL - G. THE CONTROLLIAN A SERVEY SEL - MILLIAN A SERVEY SEL -	-		Note No. BAGC - 1 FINE RY 1 OF 3 SHOULD YE	1		
SCE C. TOCK TO U. A. A bran on december parts and the manded state of the state of				L		
EAME OF DRILLER LSC HOONDOYER DIRECTION OF MOLE STREET, CAL DIRECTION ON THE PROMINERY.		FAILING 1500				
STREET - INCLINED DOC FROM VERT.		-	E 90HE1 8	1		
	UL BATE HO		TANTES CONTERED CONTERED TANTES CONTERED CONTERE	1		
THICKNESS OF OVERBURDEN G. 9'	IF. ELEVATH	M TOP OF	HOLE 574.9	1		
TOTAL DEPTH OF HOLE 510	25	PE EST	OF STREET STREET AND ASSESSED AS ASSESSED.	1		
	-	0	O T Daireine	L		
STIFF TO V.STIFF: DARK	BRA-	A	40° minum Aurena	Ē		
BLK. DOWN TO BRN. Q.O'-2.4' Mr. MRN - B 2.4'-5.5' ERN	u.e.		7.0' - 51.0'	E		
		2.	SPILLWAY CENTER LINE	Ē		
		В	FROM ORIGINAL LO- CATION.	Ē		
S.3. D. G.9. CLAY: w/ TRACE or SA			II SAMPLES:	E		
CLAY: W/ TRACE OF SA		5.	A: 0.0' - 2.4' B: 2.4' - 5.3' C: 5.3' - 6.7' D: 6.7' - 7.0' C-1:10.8' - 41.8'	E		
V. MOIST; SLI. CALC.; SY	1987	c		Ē		
	ON.C.	G.	9 3 27.3' - 28.2'	E		
SHALE: HIGHLY WEA: CLAYEN; W SMALL CALC. FROCKETS; HOVET; SOF	House's	D	5:80.2'-37.2' G-4647.0' III Ju/ATER Level:	Ē		
SUL FISSILE; W SAMPY TO WY IRON STAINE: TANE IN	GEAY I	0 7.	PORING DAILED Th	E		
To LT BLUE GRAY G.1-100 CALC. JA 12.5-17.1 W SCAL	SILT R	.8	SB.5' ON BHAY 75; WATER LEVEL WAS 5.5' AFTER 24 HRS. BORIUM WAS LEFT CHEM	E		
14.2' String Tient	OINT TO	٠.	Since Start Continues Shows	E		
PURPLE ST	REALS		HAD CAMB IN AT 12.0' I HAY. 4" PERF. PLASTIC PIPE WAS PLACED TO 12.0'	Ē		
	D:4	8 Bo	×	E		
\$	R:4	.3		E		
3.4	15	1 5	2	E		
3				E		
	15	s 15.	6	E		
i s	D: 3			E		
SANDSTONE WEAL M	RIS Rec	80	×	E		
THE STATE OF	2	-		E		
17.9'-18.3' SANBY CL	Y 55	2		Ē		
	5			E		
20.6 23.5 SOPT INTERMEDIAL W/ E SINULL W/ REV P	MPLE RE	. 7	6	E		
*****	23	5		E		
=======================================	20	6 00		E		
	23	3		E		
	b: 2	.0		E		
350-101	RE	3.		E		
SHALE: MOD. WEA. DO	SSILE	26.	.+	E		
TOPICS SS. LENSES & PARTING	3;	.6.	HOTE: BASE OF WEA.	E		
DARK GRAY BLK. 25.6'-25.8' W/ R	UST RIA	4	3	E		
28.5 - 28.7 : SOFT	5. S. 29	2		E		
29.7-24.8 sort		£ 80		E		
30 3 70 35.1	9.4	.6		E		
SANDSTONE: UNWEA; I	HALY; To	8	4	F		
		22.3	4	E		
CALC. SOFT MONTY A				E		
	33			E		
34.6 Lichime PARTI	Rau	.5		E		
SHALE: UNWEA.; BON-C				Ē		
36.1'-36.3' SILTSTONE 36.1'-36.3' CO-04/100 St.	Car. 36		3	F		
5.2 45.4 Sixtated 36.1 36.1 Comming 3 5.7 Solly Particle 37.4 59.4 Sixtated 4 37.4 59.2 Two wern Trent do	Code Ri	1 00	'	E		
37.4'-38.2' Two WERT	HTS 39.	2' ,	4	Ē		
38.2 Sitts Tout Land	32.	2	5	E		
40,0				Ē		

	40.5": LT. SILTY STREET	D:4.6 R:4.2 Rec.		E
	41.8 - 41.9 SILTY STEAK 41.8 - 41.9 SILTSTONE SEAM		41.8	ուպուս
		43. 8 D:4.	7	
	45.9'-46.0': SILTSTONE	R: 4.2 RBC: Tb 47.6	_ [աևասևա
		47.5	114	
	41.4': SILTSTONE COMO.	D: 3.2 R: 3.2 Rec. To 50.6	8 8	in the second
510	T.b. 51.0	51.0	50.6	

RECORD DRAWING-WORK AS BUILT

PRILLING LA		SWD
		- SPILLWAY & CHEMICASO
LISCE - C.		ing arts
A HARE OF DAILLES	· ·	BAGC-12
S ARMAGAN OL MO		DEA. PROM VERY.
DEPTH DRILLED S	ERBURDE NTO ROCE	25.0
ELEVATION SEPTH OF	LEGENO	31.8'
0.0		O.O' TO 15'
		O.O' TO LS' CLAY: NON-CALC.; W GRAVEL; NOIST; STIF V. STIFF; DARK BRN.— J. 5' TB 3.2' CLAY: MOD.CALC. W NODULES; MOIST; V.S DARK BRN.
1.5	-	1.5' TO 3.2' CLAY: MOD. CALC. W/
		NODULES; HOIST; V.S DARK BRH.
3.2		3.2' TO G.B' CLAY: CALC. W/CALC. W/CALICHE FOCKET. MOIST; V. STIFF; TAI
		MOIST; V. STIFF; TAI
6.8		6.6' TO 11.0'
	H	G. 8' TO 11.0' SANDSTONE " HOD. W W/ INTERBEDDED SHA
	56	SEAMS; MOIST; SOFT (EXCEPT AS INDICATE BELOW); LT. GRAY, R LYELLOW.
-		ITIC SE WICHE COME
-		WELL CEMENTED, LT. 6 7.0'-B.G. SOFT 35. SHALE LAMINATION 3. RU B.O'-B.L. RED IRON 3
110	HE	SHALE LAMINATIONS, REBORDES
	1 24	B.L'-9.L: SOFT SS & S W SCAT CALC. STREAMS, L
		GRAY & YELLOW
		SHALE SEAMS, MOD. COME LT. GRAY, TAN & YELLOW 11.0' TO 18.8' SHALE: WEA. W/ABU
-	-	SHALE: WEA. W/ABU IRON STAINING ALON BEIDDING PLANES; MODI. MODIT; CLAYEY; SOFT SCAT: SAID LEISES & PL LT. BLUE GRAY W/ RUST; P. PUPPLE.
	1	BEIDING PLANES; MOD.
		LT. BLUE GRAY W/ RUST,
	3	LT. BLUE GRAY W/ RUST. LPURPLE. 11.3'-11.6': SOFT S IRON STAINING. 11.6'-13.7': W/ SCAT.
	s .	11.6'-13.7' wy scatt Leuses & TARTINGS. 137'-138' SOFT
	9.0	13.7'-13.8' SOFT : 13.9'-14.0' SOFT : 13.9'-14.0' SOFT : 13.9'-18.8' V.CLAY
19.8		SOFT, W/ SCAT: SAND LEW W/ABMIDANT IRAN STRININ
20.0		13.9-14.0: SOFT 13.9-14.0: SOFT SOFT
		SANDSTONE : WEA.
		CEMENTED (EXCEPT
		18.8'-22.6': NOD.C
1 -		35. ACTERNATING W/WI
1 1 3	äë	CEMENTED 55. 19.2'-19.7': CLAYE 22.8'-23.2: CLAYE GRAY 23.2'-28.5': W THI SMAR P 23.2'-27.76.5'
		GRAY 23.2'- 28.5': W/ THI
	ĕĔ	AND IL AND I THE MER
1 1 =		Morp, Sta
1 1 =	8	
		ALVA.
28.5		28.5 TO 31.8 T.D.
		BEDDING THANKS IN UP
		PART; NON-CALC.; MC SOFT; FISSILE; DARE W/ SCAT LT. GRAY SAN PARTINGS & LENSES.
=		PARTINGS & LENSES.
3.1.0	7	T.D. 31.8"
	-	
'		
SYM. D.Q. NO.	ACY	ION DATE
		ARMY ENGINEE
		CORPS
DESIGNED BY	:	
DRAWN BY:		#** * * * * * * * * * * * * * * * * * *
		EMBAN
CHECKES BY	:	L
SVEWITTED	DY!	
ENGINEER:		

JECT	LOG	av.	SWD	INSTALLS	F . /1) 0/ PIT .	Hale No. 8AGC - 12	
HiLLA	10	KE-	SPILLWAYE EMPARK	TI BATO	MSL	VATION	MAYION OF CALL	
CE-C	me v					ING	1500	
HE OF DAIL			BAGC-12					
SULT	HOLE			IL ELEV	ATION GR	DUMD TAT	MAY 75 2 MAY 73	
VERTIE AL	-	40467X	68'	17. ELEV	ATION TO	P 07 HOL	5.94.9	
TAL DEPTH	ED HIT	d ROCK	25.0° 31.8°	16. TOTA	UNE OF	HEPECT	States	
ATION DE	_	EGEND	CLASSIFICATION OF MAT	ERIALS		MOX OF	REMARKS (Repling size, water less, dept) of manifesting, etc., if organization?	
. 0.8	4	•	O.O' TO 1.5'		•	8.0	I DRILLING:	-
	耳	1	COAVEL + MOIST + S	TIEF TO		A	10" FLIGHT AUGUS	
4.0	1 }	-	V. STIFF; DARK DA	W/ CALC		1.5	NOTE: HAD AUGER REFUSAL AT G.B 6.8 CORE BARREL: 6.8 - 31.8	
	Ŧ		NODULES: MOIST,	, v. STIFF,		В	NOTE: COULD NOT	
2.2	4		CLAY: CALC. W/CA	LC. NOD	LES:	3.2	NOTE : COULD NOT BEGIN CORING BE- FORE G.8 BECAUSE	
	4		W/CALICHE POCH	CETS;			OF LOUIS CORE BANKEL	_
	Ē					c	TI SAMPLES:	-
	=						A: 0.0' - 1.5' B: 1.5' - 3.2' C: 3.2' - G.8'	
	=		0.01 44.51			6.8	UNDISTURBED (CARTON):	Ξ
6.	• 📑		G B' TO LLO SANDSTONE: MO W/ INTERBEDDED SEAMS; MOIST;				UNDISTURBED (CARTON): C-1: 12.7'-13.7' C-2: 18.4'-17.2' C-3: 29.8'-30.7'	=
	3		SEAMS; MOIST; S (EXCEPT AS INDICATED SELOW); LT. GRA	CATED	D: 4.0 R: 3.4		HOTE: UNABLE TO OBTAIN ADDITIONAL CARTON SAMPLES	=
	=				To 10.2	Вох	DECYUSE OF DUDON'S	_
		-	G.B-TO: HARD	QUARTZ-	10.2	1	IN THE CORE.	Ē
**	- =	Ш	TO'-BOSOFT	SS. W/				=
11	٤	ĦĦ	8.0'-8.1' RED I			1	M BORING WAS BULED TO 27.5' ON 2MAY.	=
			W SCAT CALC. STRE	SS. & SHALE AKS, LT.			TO 29.5' ON 2MAY.	Ē
		S	9.1'- 11,0': 30F		R:4.	1	WATER LEVEL AFTER 24 HRS. WAS G.2: 2" PERF. PLASTIC PIPE	Ē
	=		SHALE SEAMS, MOD	LLOW	TO 142	1	TO BE PLACED ID I.U.	Ē
	=		IT, GRAY, TAN EYE SHALE; WEA. IRON STAINING A BEDDING PLANES; MOBY; CLAYEY; S SCAT. SAID LENSE LT. BLUE GRAY W Q. PURPLE. 11.3-11.6; S IRON STAIRING	LONG	+			E
	=		BEDDING PLANES;	MOD FISS	14.8	Box 2		E_
	Ξ	1	SCAT. SAND LENSE LT. BLUE GRAY W	RUST, YELL	D:4.			Ē
	-	5	11.3'-11.6': S	OFT SS. W	REC.	٩ _		=
	=		1 11.6 -15.1: W/	SCAT. SAN	TO 18.8	173	2	F
	=	s .	13.7'-13.8' Sc	FT SS.			1	E
			13.9'- 14.0' So 13.9'- 18.8' V SOFT, W/ SCAT, SAM	CLAYEY.	18.8	Box	4	Ē
ľ	9.0	13 6	BLUE GRAY & PURPLE	Thirlinks. E.		3		E
1	20.0	1	SANDSIONE: THIN BEDDED; THIN BE	PLE W RUST	D. 4			Ē-
	_		SANDSTONE:	WEA; SOF	R: I.	•		E
	3		CEMENTED (EXC	EPT AS	7 22.8	Box 3		Ē
	-		18.8 - 22.6:1	MOD. CEMA W/Ware	1120			E
1	-		19.2'-19.7'			1		E
- 1	_		22.8' - 23.2	RAY LAYRY, LT		0 23.1	8	E
1	:		25.2 - 28.5	ray W/ Thin lale Partin	R: 3.	3		E
	-	משממנונונים:	26.2'-26.7	CHMENTER OD, SOFT	26.7			E
- 1	-		1910					E
- 1	-	ŝ	ń			Box	1	E
			U		27			E
	20.5	1	28.5 To 31.8	T.D.	D: 4.	of	NOTE : BASE OF WEA.	E
	-	¥i	SHALE: ESS.U W WEA. IRON ST. BENDING PLANES		R: 3.	41		E
	.		PART: NON-CAL	C.; MOIS	31.2 7 31.1	-	3	E
			W/ SCAT. LT. GRA	A DVIID		30.7 Box	5	E
	31.8		T.D. 31.8		31.	34.	2	E
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EVM. D	LO. IN	1	CYION DATE			ESCRIP	TION OF REVISION	
			ARMY ENG	NEER	DIS	TRIC	T, FORT WORTH	-1
DESIG	HED	ν:		FORT W				
1				AC	AQUI	CRE	LAKE EK, TEXAS	
BRAWI			F				ND SPILLWAY	
1	EE0						BORINGS	
CHEC			1				AND 12	
				φ.				
	IFTE	BY:			INV.N	D. DACI	MG3-80-8-0086 DATED:	AUG, IS

TO ACCOMPANY FINAL FOUNDATION REPORT

RECORD DRAWING-WORK AS BUILT

1)

SRILLING LOG	SWP	MATAL LATION	FWD	Male No. 8AGC - 1
	E FMPANKMENT	IN DAYUM FOR	PERVATE	CARBOLOY
OR LUNG AGESCY			FAILI	IGNATION OF OMILL NG 1500 [DISTURNED] UNDESTURNED
HO: NO (As abuses on a and life number)	9AGC - 13	BURDEN SA	HPLES TAK	E# 0
SCHOOLSER'S		14 FOTAL HU	GROUND W	ATERCE Dance C
SE VERTICAL THELE		MT.		5 June 73: 19 June 73
THICKNESS OF OVERBUA	OCK 58.2"	19. ELEVATION	E RECOVE	TY FOR BORING 92
FOTAL DEPTH OF HOLE	60.0	One b.	or inspec	- Starber
EVATION DEPTH LEGI	10012141100		V. SAMPLE	(Drilling time, miles have, depth of menthering, etc., if algorithms)
=	SAND: WI TRACE OF	FINES;		J. DRILLING:
1 -3			A	B" FLIGHT AUGER: 0.0' - 9.0' G" CORE BARREL
1.8	CLAY: SANDY, W/ S	S FRAG -	1.8	9.0' - GO.D' NOTE: PULLED UP 5.0' & FISHTAILED
=	RED WY BRN.	r; RUST	В	To 140.0' & E - LOGGE
9.0	SAND FINE TO MED MOIST, FIRM, LT R	GRAINED;	4.0	II, SAMPLES:
1.3	MOIST, FIRM, LT R	LST		A: 0.0' - 1.8' B: 1.8' - 4.0' C: 4.0' - 6.7'
=			C	
40				C-1: 12.6'-13.5
6.9	SHALE HIGHLY WE	A. DOWN	6.9	2: 21.0' - 21.8 3: 25.1' - 26.1'
	TO UNWELL , NON- CAL	C.; SAIDY	D	UNDISTURBED (CORE): C-1: 12,6' - 13.5' 2: 21.0' - 21.8' 3: 25.1' - 26.1' 4: 36.9' - 37.7' 5: 42.3' - 43.3' 6: 50.1' - 51.1'
	IN UPPER PART; W/S FRAC; MOIST; SOF GRAY & RUST DOWN	T. DK.		6: 50.1' - 51.1' 7: 56.0' - 57.0'
	6.9'-23.1' HIGH	LY WEA. DIZ.	6	
10 =	STAINED FRE	ACTURES R:1.	7	III WATER LEVEL
= s	SLI FISSILE : WI RUST	LT GRAY REC.		* BORING BAILED TO 56.8 ON 19 JUNE 14 PERF PLASTIC
	라 다		Box	WATER LEVEL WAS
		11.9	7	20.4' AFTER 24 HES
1 3	s	D:4. R:4.	-1 -	
1 3	1	Rec	1	
= = = = = = = = = = = = = = = = = = =	-	14.9	14.1	
S				
		15.1	,	
	ยี่	D:4.		
1 - 3		R. L.		
1 3		16.5		
1 3.	<u> </u>]	16.5 16.5 18.7		
1 3,		10.7		
200		196		
1 = 1	5	D: Z. R: 1. Rec.		
1 3 3		20.1		
3:4		D: 2 R: 1.		
	23.1 - 53.1 23	REC.		(1)
3	FISSILE; DK.	21.8 23.9		
	1	n: 24	1 201	
	1	R:4.3 Rec		411
700	24.1 28.5 PJ	26.1	1 12	
3.7	BACK OVER IT	To Co	4 7	
3		PODER R: 3.8		
		Te		
	28.5 - 34.0 : 50	AT. SILT 29.9	28.5	
133				
30	30.4 SOFT 55	,	Box	
1	30.6' SOF SS	30.6	4	
		D:4.Z	1 1	
		R:4.0		
7	33.1'-73.5' 504	~ ~ TO	33.1	
	SEAL			
32	34.3 : CLAYSTONE			
1 書歌	35.1': CLAYSTONE		1. 1	ŀ
1 1	2/ 2/	D: 4.0		
]	36,0 CLAYSTONE			
	36.7 CLAYSTONE	Tocker T.	14	E
		·	4	•
	38.4 - 38.5 CLAY	STONE SAM 38.4	38.7	
		38, 4 D: 1,5 R: 1.7 Rec 1- 19,0		E

	40.0 -40.1 CLAYSTAN	~	4	E
	EPAC	D: 7.4		.
	41.3 CLAYSTONE CON	6. R.3.4	6	
一次企業		Pec.		F
144		43.3		F
3.00		7 3. 3		F
-			1 13	E
			1 4	E
		43.4		=
		D:4.6	41.2	F
	44.8 CLAYSTANE CONK	R:3.5		F
-				E
	45.8 CLAYSTONE CON	REC		E
	46.0 -46.1 CLAYSTO	JE 46.8	Box	E
	SEAM		7	E
				E
				F
200	Anni en de e	47.8		E
	48.2'-48.4' SANDSTON	•		E-
	48.4 CLAYSTONE CONC	D: 4.0	48.9	E
- 25	48.7: SANDY SEAM	R: 4.3	T.F.	E
- F. S.	48.7 : SANOY SEAM 48.9' - 49.4' : SANOY SHA	LE PEC		F
50	50.0-50.1 CLAYSTEN			F
	Coulc.	51.1		E
	51.1'-52.1 Stuby Suck		6	E
	W SOFT SS WISPS &	1	4	F
57.1	SEAMS	54.8	Box	F
	ANDSTONE STALY, MOIST	-	8	E-
HG 교 15	OFT: BK. GRAY	0:40		E
53.7	3.4 TO 54.2	R:4.0		E
	MESTONE: SANDY, FOSS.;	REC		F
SIZ I	OD SOFT TO MAD HARD;	70		E
The state of the	T. CRAY	55.1	54.3.	=
1 5	4.2' TO GO O'TD		_	E
	HALE UNWERT NOW CALL	4 1	Bex	-
1 16	RAY	55.6	9	. ⊨
	54.2' SANDY		H	==
1 2 2	54 4 CLAYSTONE 57.1-57.1 FRATURE	D:42	171	=
	- FRETURE	R:40	L	E
1 = 1		Rec	.	E
	58.1'-58.4 CLAYSTONE	To		E
3	SEAM	59.1		=
1 3 4	20,14			=
1 + 1		کا ا	2.1	E-
L = -1	ED .60.0'	1		F

3.5 Box 2.5 So

OF 4 MEET W. MAZE AND TYPE OF BIT C CARDOLD ACILITA ARE EMBANKMENT LOCATION (Construints) on Review X: 2, 99, 83, 5 Y: 84, 80, 5 ORILLING ABBRICY MSL MANUFACTURER'S DESIGNATION OF DAIL FALLING 1500 GDC-14 MANUAL THREE TO HAVE TO THE MANUAL TO HAVE TO T. SUITS THICKNESS OF OVERBURDEN 15.6'+ 45.4' T DRILLING

B' FLACHT A SCER:

6. - 2.6

6 DENISMY BBL:

2.6' - 16.6'

6 CORE BOL:

16.6' - 61.0' 8 4.6 CLAY: MOUST; HARD; CAU D' DE C TO MOTHER LEVEL:

DE C TROUBLE BRIGHT TO

(S.S.) SC. a or 25 June 73;

2 PECF PLASTIC PIPE

LUMS PLACE TO C.I. o'

MILL WITELELEL AFFER

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DE G 14.5 DB 7 ISLE TO 30 OF THE STAND CARE, NOW ST. SOUTH FOR THE STAND CARE IN STAND D:26 R:26 Rec To 19.2 Boy 1 20.2'- 21, 9': SCAT. FRACTURES D: 1.4 22.0'- 23.0': SCAT. FRACTURES REC. B ., Rec. To 23.0 23.5 - 36.0'; SCAT.
VERNCAL FRACTURE
HEAVE STAINED;
DIFFICULT TO BETTE.
CARTON SAMPLES. Es Boy Rec. 70 27.7 27. 9 D:4.6 2:3.3 REC. To 31.0 D: 1.4 Rec. 35.4 Box THE WHILE WAS THE WAS D: 3.2 2:3.5 Rec. To 38.4 376 B-x 38.9'-39.1 FRAC. 39.0 5 39,2'-10,6': SHULY, W

41.1'-41.4' SCAT. CLAY REC STONE SEAMS T. 43. 44.2' FRAC. R:4.3 Rec To 47.0 Box 47.6'-47.8' CLAYSTONE SKAM 49.3' CLAYSTONE SEAN 49.9' - 50.3' FRAC. R: 3.4 49.4 REC T. 50.4 50.3'-50.4' CLAYSTWE 51.3 Box 7 D:3.0 55.0 - 55.6 : SANDY 54.8 SEC TO GEO STANDAY

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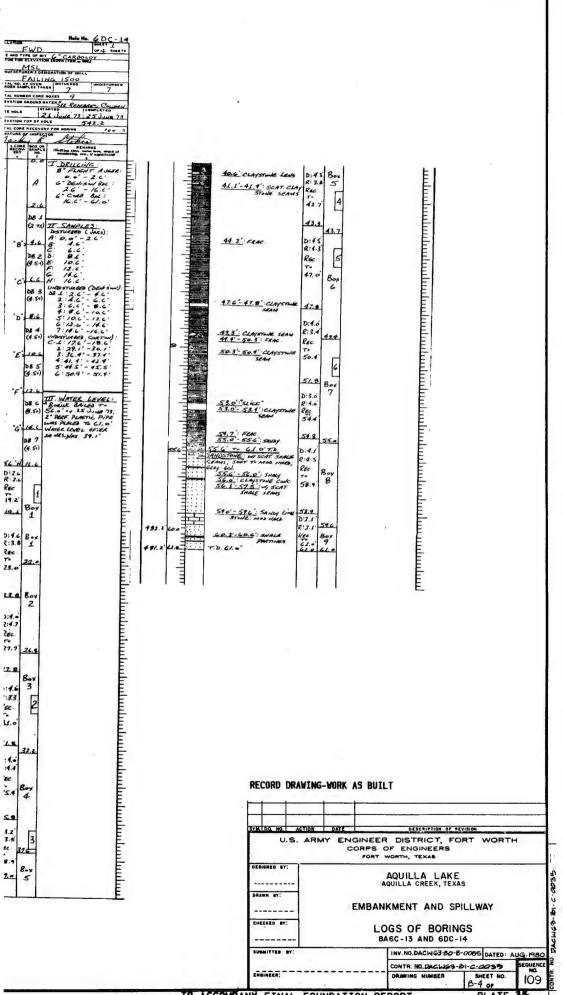
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SECRET STA D:4.1 2:45 REC BOY 510'-596' SANDY LINE 58.9 STONE: MOD NACE. D'2.1 R:21 596 182. GO.3'-GO.C': SHALE
PARTIMES Kec Box 61.0 T.D. 61.4"

RECORD DRAWING-WORK AS BUILT

SYN DO NO.	ACTION	DATE	DESCRIPTION O
U.	S. ARN		SINEER DISTRICT, ORPS OF ENGINEERS
DESIGNED BY:			AQUILLA LAN
DRAWN BY:		E	MBANKMENT AND
CHECKED BY:			LOGS OF BOR
SUBMITTED B	*:		INV. NO. DACWG3-8
			CONTR. NO DACING
EMBINEER:			DRAWING NUMBER

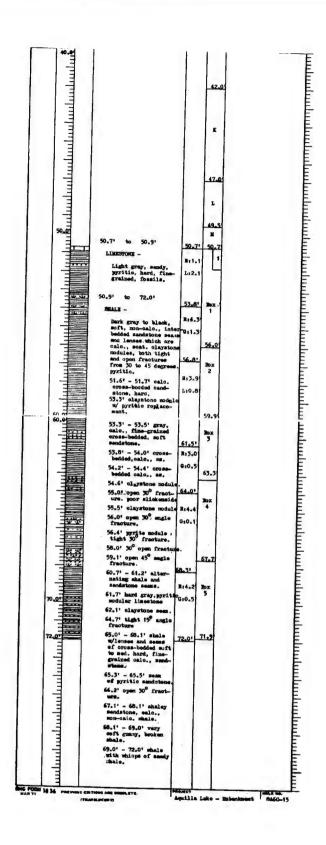


TO ACCOMPANY FINAL FOUNDATION REPORT

PLATE 35

DELLING LOC	VISION SWD	MEYAL	LATION	PED	Note No. 1 Refr.
quilla Lace - Ha		10. 5424 81 BAY			or 4 sets:
LLINE AGENCY		1	HSL.	ER'S DES	JOHATION OF BAILL
SCE-C	M 8410	12. 707	Pailin	DVER.	THE TUNBER WHOESTUNBES
OF DAILLER	8A6C-15	14. TOT	AL BURGE VATION B	R CORE	moxes 5
PERTICAL DINCLINED	DES. FROM VENT.	_	C HOLY		Nov. 175 9 Nov. 175
	49.51		VATION TO	OP OF H	V.E 541,7
TH DRILLED INTO ROCK AL DEPTH OF HOLE	72,01	W. SIGN	ATUNE OF	17/2	Wallens
	CLASSIFICATION OF MATERIA		HECON.	BOX OR	(Brilliang Steen, and Steen, Marris of
0.01	0.0° to 22.5°		•	0.0	-
1 = 1	CLAY -				1. 8" Flight Augur 0.0" - 49.7"
=	0.0° - 5.0° 011ve	gray			7 ^{7/} 8" Rockbit 49.7' - 50.7'
1 = 1	brown, sli, stiff moist, med. plast silty, sli, sandy calc., scat. tem	icity		4	6° Core Barrel 50.7' - 72.0'
] =	calc., scat. tem : calche.	, 911. Size			S0.7' - 72.0' Casing set to 49.7'
	5.0' - 6.0' Olive brown, high plast:	CT NY			
	brown, high plast; stiff, moist, calc hard caliche modu	icity.			2. Jars: A: 0.0' - 5.0'
	to 1cm., pockets o	tan		5.01	D. E 01 (01
1 4 1	color.	Very		6.0	C: 6.0' - 11.0' D: 11.0' - 16.0' E: 16.0' - 19.0'
1 3 1	6.0° - 11.0° Tan, stiff, sandy, silt moist, med. plasti calc., scat. hard ichs modules to 10	y.			F: 19.0' - 22.5'
	calo., scat. hard ichs modules to to	cal-			H: 27.5' - 33.0'
	also powdery calid	410,		С	J: 37.0' - 42.0'
3 1	tam, sandy, moist, milty, med, plast				K: 42.0° - 47.0° L: 47.0° - 49.5° M: 49.5° - 50.7°
E	calc., scat. black coarse sand size of				
10.00	some minor caliche				3. Cartons: C-1: 50.7' - 51.8'
innlundinnlundundundundundundundund	16.0' - 19.0' Oran tan, gray streaks,	ge-		11.01	0-11 X0,1" = 31,40.
1 3 1	tan, gray streaks, stiff, sandy, silt moist, low to medi	y,	ı		4. Drill rig moved off hole 4', and fishtailed
1-3-1	presticity, sil. c	alc.			to . Hole E-log- ged on 12 November 197
#	19.0' - 22.5' Tan gray, hard, moist, calc., becoming al sandy at 22.0'.	811	у.	- 1	god on 12 hovester 191.
	sandy at 22.01.			D	5. Water bailed to 52.1
-	22.51 to 49.51				with casing still in he hole. Could bail on
E	SAND -			1	further due to rate of incoming water.
=	22.5' - 27.5' Tan	,			Water level after 72 hours was
]]	wet, low plasticit silty, loose, calc.	у,	- 1	16.0"	Perferated plastic pipe set to 72.0'.
	27-5' - 33.0' Tan,				pripe set to /2.0°.
1 1	27.5' - 33.0' Tan, moist, silty, calc low planticity, loc acat pobbles.	10,		2	
1 3 1	33.0' - 37.0' Tan.	- 1			
=	loose, moist, clayo iow plusticity, ca	y, la.,		19.0'	
E. C	gravels and large onbbles present.				
28:82	SAND - (contd.)		- 1	2	
1 = 1	37.0' - 42.0' Tan,				
	wet, loose, sli. cal low plasticity, ail heavy gravels to 3	lc.,			
=			1	22.5	
	42.0' - 47.0' Tan a pockets of gray, loc	20.			
1 = 1	low plasticity, cal	0.		- 1	
huduuhudu	47.0' - 49.5' Tan, low plasticity, lo	080			
=	oalc., heavy gravel and coarse sand siz			6	•
1 = 1	ironstone pebbles present.				
			2	7.5	
1 = 1			Г		
30.02				×	
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lumhundan			2	2.01	
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lunhunhunhun			31	2.01	
* Գաևանակարևակարևակարևակար			3	2.01	

HC POSH 16



		1
SYM DO NO. A	CTION DATE	DESCRIPTION OF RE
u.s.	ARMY E	NGINEER DISTRICT, FO CORPS OF ENGINEERS FORT WORTH, TEXAS
DESISNED BY:		AQUILLA LAKE AQUILLA CREEK, TEXA
DRAWN BY:		EMBANKMENT AND SP
CHECKED BY:		LOGS OF BORING
-		INV. NO. DACWG3-80-B
ENGINEER:		CONTR. NO. PACHIGS-E

THE DO NO. 1 ACTION	DATE	DESCRIPTION OF	REVISION					
U.S. AR	CORPS	ER DISTRICT, FO S OF ENGINEERS T WORTH, TEXAS	ORT WORTH	1				
DESIGNED BY:		AQUILLA LAKE						
DRAWN SY:	EMB	ANKMENT AND S	PILLWAY					
CHECKED BY:	LOGS OF BORINGS							
SUBMITTED BY:		INV. NO. DACHG3-80	B-0085 DATED:	UG. 1980				
		CONTR. NO. DACINGS	-B1-C-0035	SEQUENCE				
EMETHEER:		DRAWING NUMBER	DRAWING NUMBER SHEET NO. 8-5 OF					

PROJECT	LING LE		SWD	10. 642 6	AMD TYPE	WD or our	Note the GDC- Intel 1 In 5 to CARPOLOUS BLANCOM	e 73
SHIP	A	YKL	EMBAUKMENT				ONATION OF BALL	
			: 84515		FA	ILING	1500	
USCE	-		GDC-16		AL NO OF		5 4	_
G. SC.		KER			AL HUMBE VATION 65		TER BEMARES COLLIN	
Diectio				M. BAT	E HOLE	1 1	7 MAY 75 22 MAY	23
		RBURDE		17. ELE	AL CORE	ECOVER	T FOR BORNES 78	
TOTAL M	PTH 0F	HOL E	100.0	1	ach	HAPPE	18to	
ELEVATION		LEGEND	CLASSIFICATION OF MATERIA	1	HECOV.	BOX OR	(Desting the series from depth of	-
322.2	0.0		O.O' TO 3.6' # CLAY: HOIST; W/TRA SAND; V. STIFF TO HAI			0.0	I. DRILLING:	_
	=		SAND; V. STIFF TO HAI	Ub;		A	B' FLIGHT AUGH	
	=		pa. Brin.			"	G" DENISON BARR 2.6' - 12.6' G" CORE BARREL 12.6' - 100.0	E.L
	=					2.6	12.6 - 100.0	
	=					D8 "1		
	=	-	3.6'1 TO 5.6'T	HAPR		(4.5+)	II SAMPLES:	
	=		RUST BRN. E LT. GRAY	, ,,,,,,,,	. 8		A: 0.0' - 2.6'	
	=					D8"Z	B: 4.6	
	Ξ		5.6' + 10 9.6' +	ite		(4.5+)	D: 8.6' E: 10.6' F: 12.6'	
	=		S.G': 10 9.G': SAND: SLI. CLAYEY; F TO MED GRAINED; MOIS FIRM; RUST TAN & LT.	T;	· c;	6.6		٥:
	=		The state of the s			DB"3	DE 1: 2.6' - 4.6' 2:4.6' - 6.6'	
	Ξ					8.50	3: 6.6 - 8.6 4: 8.6' - 106' 5:10.6 - 12.6'	
					'n'	8.6	UNDISTURBED (CORE)	
	=					DB 4	UNDISTURBED (CORE): C-1: /3.8' - 14.8' 2: 11.4' - 20.4'	
	9	-	96' TO 106'S CLAY: HOIST; W/ WEA.	SHAIR			2: 11.4 - 20.4 2: 23.1' - 24.9' 4: 31.5' - 32.5' 5: 33.8' - 34.8'	
511.6	106		SCAT GRAVEL;	_,	,E,	10.6	6:41.0' -42.0'	
		5	10.6't TO 17.8'	. 400	t .	08'5	8:50.7'-51.7'	
	Ξ		SHALE: HIGHLY WEA.	AT			8:50.7'-51.7' 4:56.3'-57.3' 10:61.4'-62.4' 11:67.5'-68.5'	
	-	ي.	TIGHT FRAC ; NON- CA W/ GYP VEINING; W/S SANDY POCKETS & LA OLIVE GRAY & RUST V	SCAT	12.6	12.6	11:07.5 - 68.5 12:75.8 - 76.8 13:81.1 - 82.1 14:85.0 - 86.0 15:89.5 - 90.5 16:95.9 - 94.7	
			OLIVE GRAY & RUST V	W LT	D: 3.2	12.4	14:85.0' -86.0'	
	11	s -	15.9' - 16.7': SAN		Risio Rec	_	16:95,9' -94.9'	
	Ξ	1			TO 15.6	1	TT . /	
	_					p	M WATER LEVEL	d.
	=	3			15.8	Box 1	FOR E-LOCKING &	
					D:27		LATER DATE	
	_=	s			LOST 17.7-			
504.4	17.8		179' TO 213'		10.5			
			WINDERPEDIED CHAIS		18.5			
	=		MOIST; THAT TO GRAY 17.8'- 17.9': MOD. HA ROW STAINED, RUS	RD.	18.5 0:13 R. 0.8	18.9		
	20.0		17.9'- 18.4' SOFT S	REP.	12.9	2		
502.2'	=	::::	17.9'-18.6': SOFT S 18.6'-18.7': MOD. SOF S.S.		D: 2.0 R: 1.9 REC.		RASE OF WEA AT	
500.9"	213		18.7 - 20.1 HAD CA		To .		BASE OF WEA. AT	
300.7	=		20.4' -20.5: SOFT - 20.6' -21.0: HARD C S.S., LTY-N M. 20.8' - 21.3'; INTERN MOD. SOFT S.S.	HWEA.	21.3	n		
	Ξ	4.0	20.6' - 21.6' HARD	410.	D: 1.8 R: 1.7	2		
	=	3 '3	20.8' - 21.3'; INTERN.	200 4D	23.0			
	Ξ	100	213' TO 511		23.6			
	Ξ		SHALE: UNWEA. , HON -	CALC.	D:4.2	3		
	-	Y	UNLER SHALE 213' TO 511' SHALE; UNWEA,) HON- SOFT; MOINT; FISSILE CAT. CLAYSTONE SEAM COAC.; W/ OCCAS, MOS. N L5 SEAM; W/ SCAT, TICL JOINTS; JW, GRAY BLK. 22,6'-22,7' IMOB, IMPR 22,7'-23,25'	. 4	R:4.3' Rec.	25.4		
			CONC.; W/ OCCAS, MOD. I LS SEAM; W/ SCAT, TIG	HT	T. 27,3	23.7		
	1		JOINTS; W. GRAY BLK. 22.6'-22.7' MOB. HARB 22.7'-23.0': TIGHT J	CLAYST	-			
	=		28.1: CLAVATONE	-141				
	=	77	23.3'-23.6' CLAYSTON 24.9'-25.0'	E SEAN	27.6	Box 3		
	=	//	27.5-25.2 : TIGHT .	Jaide	D:3.0			
	=	7			R:3,4 Rec.			
	_ =		29.8'- 30.7' SILTY N	CKETS	30.7			
	so		30.7' - 30.8'; HARE LS	SEAM		30.Z		
	=		30,7 - 30.8 : HARD LS 30,9 - 31.0 : PYRITE ! 31.1 : CLAYSTONE 31.5 - 32,1 : LEEG. 5	ceds.	30.8 D:2.4			
	=	- 39	31.5 -32.7 irees. 5	iir	R: 1.8			
	1	- 90			REC. 70 32.5	4		
	3	80.0	33.0' - 33.2' HARO CU		33.2	Box 4		
	=	7	33.5'-33.8': 2 TICH		D: 3.6	_		
	3	5	34.2' CLAYSTONE \$4.7'-34.7' CLAYST 54.7'-36.2' SILT PA		R.4.0	5		
	=	- 1/2	34,4'-34.2 SILT P	KTIMES	36.5	[
	=	1			30.4			
			34.2 - 38.2 interes	1000 W	ĺ	36.5		
	=		SiLTETON		36.8 D:2.0			
	=		37.6'-37.7' CLAYSTO	ME	D:2.0' R:1.6'		Δ	
			38.0'-38.1': " 38.1': TIGHT FRAC.		Rec To 38.1	Box 5		
	1		38.4'-40.0': "	RAC.	30.0			
					D: 4.0			

42.1'-42.4'S TIGHT FORC. 42.7'-42.4'S CLAYING SIN. 49.0'-45.7' CLAPSTONE COND. 49.0'-44.2': Skry Laminstin 49.1'-48.2': CLAYSTAN SAME 49.4'-48.5': SILTY SEAM SD 0'- SOL' SILTY LAM

SD 2'- SOL' SILTY LAM

SD 2'- SOL' SILTY LAM

SOL' SOL' SOL' SILTY

STALLE THINGS THE TO

COUNTY HARD MODE FOR TO MOD.

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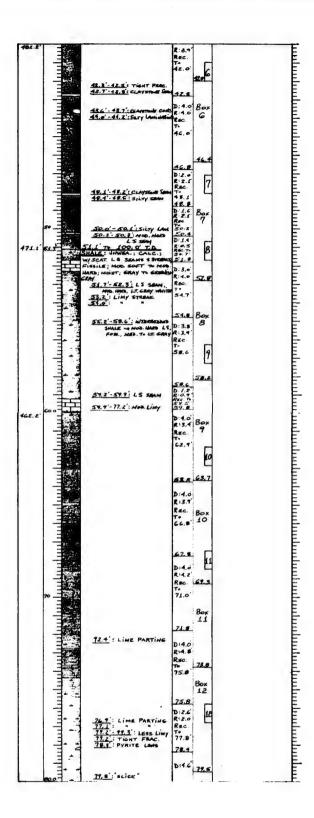
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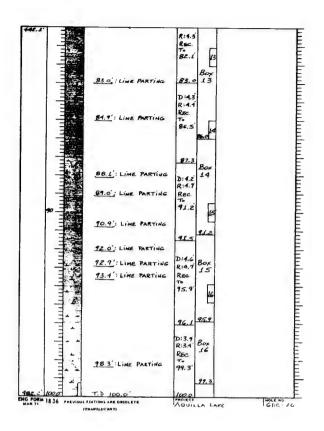
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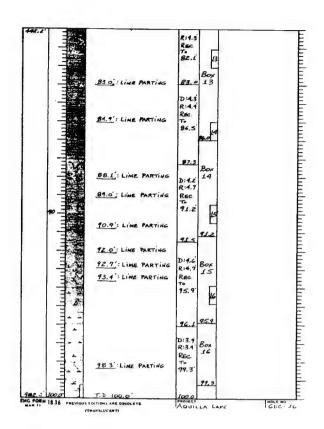
STALLES MOD HARD LONG

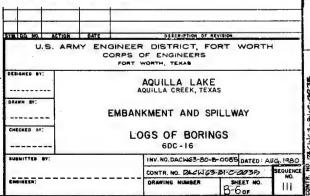
STALLES MOD HARD 72.4': Lime Pa 12.4' : LIME PARTING 76.7: Lime Parting
77.1:
17.2: 19.3: Less Liny
77.2: Tight FRAC.
78.1: Pyrite Lans





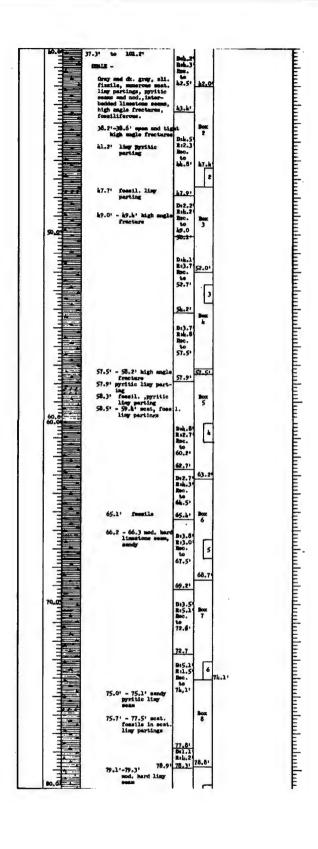
SYM DO HO	ACTION	DATE	DESCRIPTION OF RE
U.S	. ARM		GINEER DISTRICT, FO CORPS OF ENGINEERS FORT WORTH, TEXAS
DESIGNED BY:			AQUILLA LAKE AQUILLA CREEK, TEXA
DRAWH EY:			EMBANKMENT AND SPI
CHECKED BY:			LOGS OF BORING
SUBMITTED BY:			1NV.NO.DACH63-80-8-
ENGINEER:			CONTR. NO. DACHES





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Aqui.	090, %	00 - 10 55	Tr 85,190	P. BAH	SL	EN 1 0454	MATIES OF SALL
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O. S	MILLER Choose		8A6C-17			ROUND T	
DOVERY			960. PROM VERT.	-	E HOLE	26	July '73 31 July '73
. THECKINE	14 OF OV	ABURBE	36,51		AL CORE	OP OF HO	LE 504.91
TOYAL O	EPTH OF	HOLE	107.51	-	Canada	UP.	Mathena
ILEVATION	0.01	rseamo	0.01 to 3.01	•	***	O.O.	Charles and the same has death of
	-		CLAY -			0.0	1. 8° Flight Auger 0.0' - 36.5'
			Dark brown, silty, moist, high plastic	ali.			6" Core Barrel 36.5' - 101.2'
	=		soist, high plastic	ity,			
501.91	=		3.04 to 8.04			3.01	8" Casing ses to 36.5"
]		CLAY -				2. Jare :
			Chocolate brown, we silty, sli. moist, calc., high plastic	ali.			2. Jarv : A: 0.0° - 3.0° B: 3.0° - 5.0° C: 8.0° - 13.0° D: 13.0° - 17.0° E: 17.0° - 22.0° F: 22.0° - 26.5° G: 26.5° - 31.5°
			calc., high plastic	ity.		В	D: 13.0' - 17.0' E: 17.0' - 22.0'
							P: 22.0' - 26.5' 0: 26.5' - 31.5' H: 31.5' - 36.5'
]						H: 31.5' - 36.5'
Los ne			8.0' to 13.0'			8.01	3. Cartons : C-1: 38.8' - 39.8'
L96.91			CLAY -				C-2: 16.1' - 17.1' C-3: 52.7' - 53.7'
	=		Brown, sli. sandy, moist, med. plastic	s21.			3. Cartons : C-1: 38.8' - 39.8' C-2: \$6.b' - \$7.b' C-3: 52.7' - 53.7' C-5: 66.5' - 61.2' C-5: 66.5' - 67.5' C-6: 73.1' - 74.2' C-7: 79.8' - 80.8' C-8: 85.b: - 86.b.
	10.0		calc.	. vJ,		c	C-8: 73.1' - 74.1' C-7: 79.8' - 80.8' C-8: 85.4' - 86.4'
							C-9: 92.7' - 93.8' C-10: 100.1' - 101.2'
							4. E-logged 31 July '73 Perferated clastic pips set to 50.0'
491.91	=		13.0' to 17.0'			13.01	pipe set to 50.0'
	Ē		CLAY -				
	1		light brown, sli. s sli, moist, med. pl ity, calc.	andy,		ь	
	milim		-w, care.			"	
	=			İ			
687.91	1		17.0° to 22.0°			17.01	
	=		CLAY -				
			Ten, sandy, moist, plasticity, calc.	med.		E	
	1						
	20.04			ļ			
	1						[7]
182.91			22.0' to 26.5'			22.04	
		٠,	SAND -				
			Light then, clayey,	1017			
	=		Light then, clayer, moist, med. to low plasticity, calc.				
]						
	1111						
478.4°	luni		26.5' to 31.5'			26.5	
	=		SAITO -				
	mhahahanlanlan		Light tan w/white st	treak	,		
			clayey, very moist, to low plasticity,	salc.			
	Ξ			İ		0	
	4						
	1						
473.4 1	直		31.5' to 36.5'			31.51	
	=			, I			
	4		Dark gray, clayey, t moist, low plasticit calc., w/tabular rot	me- I			
	imhinhurhur		ed sandstone and dar limestone pubbles at	rk I		-	
	=		lower portions.				
	=======================================						
₩68.H1	-	40,017	36.5' to 37.3'		36,51	36,51	
467.6°			LIMESTONE -		D:2.7	Box	
	1111		Light clive brown and		Rec.	1	
		-	white, sandy, fine-gr ed crystalline, angul lisy siltstone at bas	ar	38.21		
	1		strucks of a dk, mine	ud L	39.21	1	
	-	1	along besting.	- 1		_	

10.0 37.3' to 100.2'		
mails -	Bel.3 Be. to h2.5	
Oray and dr. gray, ali.	to 12.5	12.0
fissile, muerous sect. fissile, muerous sect. lisy partings, pyritic seems and nod, inter- bedded lisestone seems,		
bedded limestone seems,	13.4	
high angle fractures, fossiliferous.		
38.2'-38.6' open and time high angle fracture	nt.	2 2
\$1.2' lies meritic	B12.3	
kl.2' lier portic	to to	
	44.8	47.4
		2
k7.7' fossil. limy	h7.91	
10 01 - 10 L1 Met	Di2.2 Rsk.2 Rsc.	
h9.0' - h9.h' high engle fracture	to	Beat 3
	19.0 50.1	
	30.0	
	Dak.11	
	Rec.	52.01
	te 52.7	.,
		3
	S4.2"	her.
		7
	2M.6	
	D:3.7 2 M. 6 Bec. to 57.5	
57.5' - 50.2' high engle fracture 57.9' pyritic ling part- free fracture 90.3' feesil, pyritic		
57.5' - 50.2' high angle	57.9	\$7.51
57.9' pyritic limy part-	-	
58.3' feesil, ,pyritic		Bex 5
58.3' feesil, pyritic liny parting 58.5' - 59.4' scat, fees liny parting 60.0' - 100	1.	
	Dale . S	d
	Dsh.86 R:2.76 Rec. to 60.21	1
	60.21	
	62.7	
		63.2
	Rek. 3"	
	D12.74 Rd.31 Rec. to 64.51	
	45.k1	Best 6
65.11 Restall		•
60.2 - 66.3 mod. har limstone seam, sandy	D:3.64 R:3.04 Rec.	Ы
	l to	s
	67.51	
		68.7
10.00	69.2	
70.00	D13.5	
	Bis.5 Ris.1 Bec.	Box 7
	to 72.61	
	72.7	
	D:5.15	6
	Be.	74.1
75.0' - 75.1' sandy	to 7k,1'	
75.0' - 75.1' sandy pyritic liny seam		
		Box 8
75.7' - 77.5' scat. fossils in scat. limp partings		
	77 A	
	77.81 Dol.11 Rol.21	14
79.1'-79.3' 78.9		78.81
mod, hard limy		
An de les		



	10.0	80.3' - 81.2' moner- ous fossilif. liny partings	D:h.?' R:h.8' Roc. to 83.1'		THE PERSON NAMED IN
			83.1	Bex 9	
		86.21 - 85.11 linest w/mmerous foes at bess		Bk.k	THE PERSON NAMED IN
			to' 87.3	<u> </u>	
		87.9' fossil	88.h1	30x 10	
	70.0		B14.21 R13.71 Rac. to 91.01	90.1	
		92.9' - %.8' limest gruy, mod, hard, feasiliferous	92.61 D:3.6 R:4.0	Box 11 9	
		95.3' - 99.7' scat. Feemila	to 95.01	95.69	
			96.24 Dal. 01 R12.01 Rec. to 97.01	Box 12	
	100.017	99.7° - 100.6° lime- stone gray mod. hard, fossilif.	97.01		111111111111111111111111111111111111111
œ.7°		101,2' T. B.	D:2.1 Reh.2 Noc. to 101.2'	107.54	THE PERSON
	Imhim		02.3		
	ահակավավարարական				
	milmin				THE PERSON NAMED IN
	untum				
	արարարարա				THE PERSON NAMED IN
	արուր				
	unfunt				
	unlun				
FORM	1836 PREVIOUS ER	THREE ARE GOODLETE.	Aquil	a Lake - Embankment 5465-17	-

RECORD

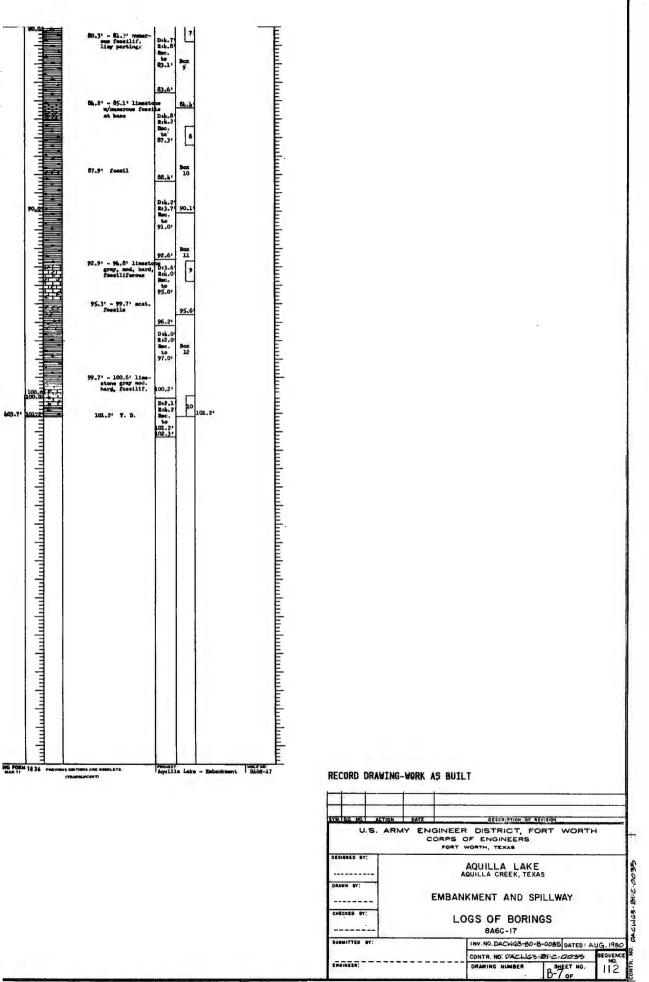
SYR IRO H

DESIGNED

EVBMITTE!

DRAWN BY

CHECKES



TO ACCOMPANY FINAL FOUNDATION REPORT

	eyisida	MISTAL	ATION		Hale He. GDC -18			
PROJET	ZIND		FW	D OF SHT	G"CARBOLOV T DIAMPER			
ACULLA LAKE - EMBANKMENT E LOCA 131 (Com or Release) A BRILLING LOCKEY Y: 84.145			11. DAY UM YOU ELEVATION SHOWN (TEN SHEET)					
A BRILLING AGENCY			FAI	LING	1500			
S. N MIC OF LANDICE M	6DC-18	14. 701	AL MINOR	A CORE E	oses 18			
Elvention Checking		H. DAT	E HOLE	1974	3 MAY 73 1 June 73			
7. THICHHESE OF OVERBURDS	H 31.8'	17. ELE	VATION TO	# 0F HO	504.8			
S. TOTAL DESTROY HOLE	130.0	10. 846.	ATUNGO	P	tto			
ELEVATION DEPTH LEGENS		10/	RECOV-	BON OF	(Drilling time, upder from, depth of separationing, see., N capablecond			
2504.6 \$2.61	0.0' TO 3.0' t		-	0.0	I DRILLING:			
-=	CLAY: MOIST; STIFF	,		A	10" FLIGHT AUGER: 0.0' - 2.6' 6" DENISON BUL: 2.6' - 29.6' 9 %8' ROCKBIT: 0.0' - 32.0'			
=					2.6' - 29.6' 9 % Rocrair			
. 🗐				2.6	SET D LASING TO SEID			
=	CLAY: SLI SILTY; MO V. STIFF; CALC.; BRN DE. BRN.	ist;		(3.5)	G' COME BACCEL: 34.0' - 130.0'			
	DE. BEN.	. т•			34.0'-180.0'			
_=			8	4.G	IT. SAMPLES:			
=				(3.2)	A:0.0' -2.6'			
ափակափակակում			·c;	6.6	C: 6.6			
			ر ع	DB 5	E: 126' E: 126' G: 146' H: 166'			
				(J.5)	H: 16.6			
			, p.,	8.6	J: 20.6			
- 3	9.6' = 10 21.6' =			DE 4 (3.25)	K: 22.6' L: 24.6' M: 26.6'			
.10	CLAY: SL. SILTY: WITE	ACE STIFE		(5.23)	M: 26.6' N: 28.6'- 24.6' UWBISTURED (DENISON):			
Ē	TO V. STIFF; CALC.; BA	W.	'E	10.6	DS 1: 26'-4.6' 2: 4.6'-6.6'			
10	THE TOP FLOT TO THE STATE OF FINE SAND, MOIST; TO V. STIEF; CALC.; BU DOWN TO BE BERN 1962 - 1162 : BEN 1962 - 2162 : BE	841.		DB 5	N:286 24.6 (
·]			'F'		7: 14.6' -16.6'			
-=				2.15)	D. 10.6 - 10.6			
<u>-</u> <u>=</u>					9 186 - 206 10 20.6 - 22.6 11:22.6 - 24.6 12:24.6 - 26.6			
=			·6':	19.6	13: 26.6 28.6			
=				DB 7 (1.75)	2: 40.1 - 11.1			
shodanlanlanlan					Whitness (cons): C-1: 35.8 - 36.8' 2: 40.1' 41.1' 3: 45.1' -46.1' 4: 52.0' - 51.0' 5: 57.8' - 58.8' 6: 63.0' - 64.0' 7: 64.2' - 70.2'			
			'H'	16.4 DB 8	6 63.0 - 64.0			
=				(1.75)	9 97 1 - 58 /			
3			. 1	18.4	11:98.2 - 97.2			
=	·			DB 9 (1.75)	12 105.0 - 106.0			
464.8 20 =					15:124.6 - 127.5			
			ຳ;	20.6 08 10	MATER LEVEL:			
	21.6't to 27.6't			(1.75)	BORING AFTER BURNE			
=	21.6't TO 27.6't CLAY: SAIDY; MOIST; S CALC.; BELL W/ RUST	TIFF;			AT A LATER DATE.			
			'£	D8 11	E			
n limit				(4.75)	E			
			'L':	24.4	E			
=				DB 12 (1.75)	 			
					E			
			'M'	24.6 DB 13				
	27.6't to 30.0't			(1.73)	E			
	CLAY: SLI. SANDY: V. N. STIFF; WY ORGANIE STE	ins;		28.4	E			
=	DE GRAY BLE.			.H.	i E			
, <u> </u>	30.0' To 31.8'			29.6	E			
	SAND: SLI. CLAYEY; GE WI SCAT, COBBLES; SAT BRAY BRJ.	AELLY		Rocate.	E			
				1.0	E			
473.0' 31.8	SHALE: PREDOM SAME	SHALE		6	E			
	ISOFT S.3 SHAMS : ESS. U	WHILE A.		CLEAN-OUT	E			
	31.8'-34.4' SAMPY ST 34.4'-34.6' SAMPY ST	ALE S.	24 -		E			
	34.6 -35.0 3AMy S	MLE 53	34.0 D:38	34,9	Į į			
1 1 2			R:34	Box				
1 1	37.4 - 37.5 CLAYS	tune shale	Rec To		E			
300			37.4	1	F			
=	1				E			
4 .:			37.8 D: 4.0					
1 1 1	36.9'-31.1 ; seer 5.	s .	R: 3.7		E			
				32.1	E			
live Time			L	L	<u> </u>			

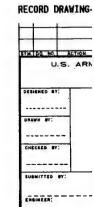
		- do.s'40.6': CLAYSTONE PO-NCEYS	Rec. 41.1	2 Box	
12.5		42.1' To 43.4'	41.8 D: 3.2	Box	
3		LIMESTONE: SANDY: MOD.	D: 3.2 R: 3.2		
13.4		LT. GRAY WHITE	REC.		
3		13.4' To 110.3'	44.3	44.5	
1 3		SHALE : CALC ; WWEA; FORS; FISSUE MOIST; W/SCAT		44.3	
-		LIMY ZONES; MOD. SOFT TO MOD. HARD.; LT. GRAY TO	45.0	4	
3	Self in	GREENISH GRAY.	D:4.1	3	E
=			R:4.4	-	E
1	-	47.1'-49.3' SCAT. LIME	REC.	Box	· E
3	72.23	PARTINES	48.7	3	
1 -3					
E	40.00				
E	7.47	49.4'-50.3' Liny; Foss.	49.4.		E
. E	-		D: 4.7	49.8	
3	1		R:4.5		E
-3		50.9 Line PARTINE	Rec.	Box 4	
1	1		53.0	7	
=	10.7				E
3	-			4	E
13				7	
E	4.5	54.0'- 57.8' SOFT GUMAY	53.8	E4 3	F
1	71	SINCE.	D:4.0	54.3	E
-	Sail.		R:f.8		Ė
3			Rec.	Box	F
1 =			51.8	Box 5	
1 3					E
1 3	-				
1 -			57.6		
13	4		D: 4.0	5	E
1 =			` "		
200	4				
E			REC. To 61.4	60.6	
1 4	.5	n 1	61.4		
=	+		61.8		
=	11:31			Box	
1 3			D: 4.0	" _	
3			Rec.	6	
- indun			65.4		
3		64.5': LIME PARTING			
mlunlun			45.8		
1 3			D: 1.4	44.8	
-		67.2'-67.3' Limy STEER	R: 3.0		
1 3			REC.	Box	
1 =			67.2	7	
=					
			69.2		
70 -	4		D: 4.6		
			R: 3.4	1	
-=			Rec.		
1 3	36	718-719 LINY STEAK	73.1	71.9	
	all a	72.1': Line Marine	73.1		1
1 3		13.2'- 73.5' Liny STREET			
13		13.2 - 15.5 LINY STRAN	1,		
1 =	10		7.2.6	Ber	
=	-3.		D: 4.	8	
-	Offic Marie		REC		
=	3		10	1	1
1 3	- 4		77.4	2/ -	
] =				76.7	
1 3	-3		77.8		
1 =				Box	
=			D14.0		
-	*		R; 3.7		1
	3.	79.9 - 80.0 Foss. : Liney	1		

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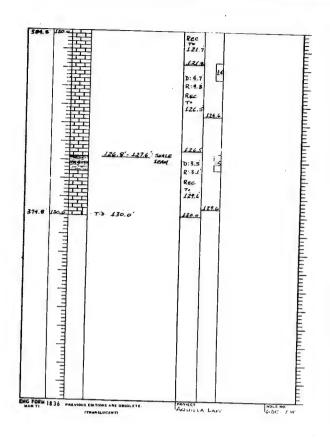
4.5-40.6	LAYSTONE	TEC.	2	
789	-40573		Bex	
7 42.1 To 43.4	<u> </u>	4.6.B.	Box 2	
SOFT; WI SHALE	WISES:	R: 3.2		
4 13.4 LT. GRAY WHITE	DIVINE PERMIT	Rec		
13.4 To 110.	3' WWEA, FORE, W/SCAT	44.3	44.3	
		45.0		
MOD. HARD., LT.	RAY To	D: 4.1	3	
		R:4.4	믭	
300		REC.	Box	
47.1'-47.3	CAT LIME	To 48.7	3	
333				
49.4'-50.3	in Face	49.4		
= E		D: 4.7	49.8	
		R:4.3		
50.9': Line P	MET, NE	Rec.	Box 4	
		51.0	·	
E			4	
			4	
	Soft Supply	53.6		
54.0'-57.8'	SHALE	D:4.0	54.3	
		R:1.8		
3 2		Rec.	Rox	
1 1 1		T= 57.8	Box 5	
1 3 1		52.6		
1 -1 -1		D: 4.0	5	
3-1		R: 3.6	4	
- A				
.s. 200		Rec.		
		REC. To	60.6	_
		44.8		
			Box	
3 8		D:4.0	6	
		Rac.	6	
66.5 Lime		65.4	4	
64.5': Lime	PARTING		1	
3				
		45.8	46.3	
3 3		D: 3.4 R: 3.8		
67.2'-67.3	Limy STREAK	Rec.		
		G7.2	Box 7	
333			'	
3		69.2	1 4	
10 -		D: 4.6		
		R: 3.1	1	
3		Rec.		
71.8'-71.9': 72.1': Limit	LINY STREAM	73. 1	71.9	
1000				
73.2'-73.5	Liny STREET	4		
		73.5	Bex	
=		D: 4.	8	
		R:4-	5	
		REC.	1	
		77.4	1.	
3 3			76.7	
- 17A	,			
1 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7		177 4		
		17.8 D:4.4	10	

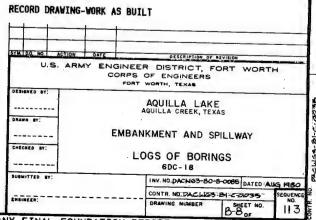
424.8	80 - C		Per	d	 E
		80.7'-RLL'; FOR ; LIMY	Rec. 70 81.8	8	F
	-		81.3		E
			81.8		E
	-	82.6'-83.6': LIMY SEAM	D:4.0	82.5	F
	- 22	SELECTION, SELECT	R: 3.8		E
	-96		Rec .		E
	-	83.9'-85.0': LINY SEAM	7	Box	E
	=		85.1	10	E
	3				E
	3	85.7 Liny PARTINE	85.8		F
		W.T. LIMY PARTIAL			E
	- 2.6		3.4		E
			R:4.1	H	F
	=1202		REC	- 9	E
	- 2	88.1'-89.2': V. LIMY	84.2	88)	=
	3				E
	333		\$9.2		E
	300		D: 4.6	11	E
	** <u>-</u>		R:4.2	11	=
	- 3747	94.0'-922': Limy SEAM.	Rec	l l	E
	300	Foss.	40		E
	-		93.4		E
	1			92.8	E
	1 3 -			14.8	E
	3		93.8	Н	E
	- 400			10	E
	3		D:4.	4	hadaadaa
	1 -1 -13		R:4.4	Box	F
	377	955-97.6 For ; Liny	Rec.	12	E
	1 = 1		17.8		F
	1 3 -3		1		E
	1 -3 7			1	E
	4		978		E
		98.2'-110.3': Liny For	D:4.	98.2	E
	3 -	MOD. HARD.	R:3.5	11	F
	7- 4			4	E
	100		1		F
404.8	00.0		Rec.		E
	-	P	Rec.		E
	-	Page 1		Box	E
	7		101.1	13	F
	1 -		D:4.0		E
	-		R: 3.7		E
	3888		Rec.		F
		1	105.	108.7	F
	3				E
	-			Id	-
	3		105	12	E
	-		b:3.4		E
	388		R:4.	Box 14	F
	-		REC.	-	E
	- 100		109.0	1	
	3				F
	-333		1.	109.0	E
	3		109.2	١ ١	E
	110		D: 4.6		E
394.3	100	110.3' TO 130.0' T. D.			E
	1 3零	MOD. HARD TO HARD; WITH	Rec		E
	工工	MOD. HARD TO HARD; WITH ABUNDANT CALC. SHALE WISPS & STRINGERS; LT.	To	Box 15	E
	1 -1-		113.		E
	1 1	111.9'-111.0' SHALE	-		E
	1	LIZO - 130,0': DECREAS			E
	1	ILEO - 130,0 : DECREAS	113.	43	E
				1	E
	1		D: 3.4	114.6	F
	1	3	R:4.1	1	E
	17E		Rec.		=
			117.		E
1	1 355			Box	E
	1,-1,			16	
	417	-	117	1 1	E
	1 11	:	D: 4.		E
	1	= .	R:4.	i	E
	1	=		112.1	F
Į.	1 72	3	1	1 1	E

394, 6	120.0	
374.6		-7-3
	duul	



P. T. 1300 T. D. D. STONE; FOSS, SOLID R. HARD TO MAKE, WITH RAWLE MAKE SANCE	R	98.2'-110.3': Limy; Fors; MO: HAGO	95.5'-97.0's para; Ling	91.6-922: Liny SHAM,	ā i	83.9'-85.0': Liny SEAM	82.C'-83.C': LIMY SEAM
9,0°	(01.5 (01.5 (01.5 (01.5 (01.5	77.8 2:4.6 R:3.5	73.8 b:4.4 R:4.4 Rec. To 77.8	89.2 0:4.6 R:4.2 Rsc. 72 13.4	3:3.4 R:4.1 Rec 72 84.2	\$5.1 85.1	B1.6 D:4.6 R:3.1
Box 14	Box 13	28.2 11	12.8 Id	Box 11	9	10	02.





TO ACCOMPANY FINAL FOUNDATION REPORT

BORNET.	.#4-10	ď	SW/D		E Y	/D	Bale No. BAGC-
		KE-	EMBANKMENT		ME FOR E	LEVATED	C" CARROLOY & DIAHON
TANCE OF	.ainey				FA	LING	1500
¥	-		BAGC-21		AL HUMA	LES VAR	2 0
SHI				16. EL.	VATION 0	Acques T	SPEREMANCS COLUMN
12 (847)	10' 0/1			17.	VATION T	11	4 MAY 73 16 MAY 73
-	1.L 100 H	TO ROC	55.0 :	10. 707		HIPPEC	on States
	-		CLAMPICATION OF MATE	MALS /	14500	200-00	Change on the American
	0.6		CLAY MOIST; ST		- v	0.0	T DRILLING:
	-		CLAY: MOIST; STI	FF TO C.; DARK	:	A	10" FLIGHT AUGER:
	1111		CLAY: SLI. MOIST, V			14	NOTE: HAD AUGER
	1		CALC.; BAN.	. 3117	1	В	9 % ROCKBIT:
1	-:				1	٦	6 COBBLES. 9 78 ROCKBIT: 4.0' - 6.8' 6" CORE BARREL: 6.8' - 61.8'
182.3	11		4.0' TO G.B'+			4.0	
	litte		COBBLES: W/TRAC)	Rock	T CAMPIES.
			SAND; SLI. HOIST; V CALC.; BRN TAN (I HAD AUSER REPUSAL	Nore:	1	d.	DISTURBED (JARS):
					Ja.)	SAMPLE	A: 0.0' - 1.4' B: 1.4' - 4.0' UNDISTURBED (CORE):
5 29.5	6.8	-74	EDGE SHOULD BE S	۸.;	6.8	6.8	UNDSTURBED (COME); C-1: 7.0'-8.0' 2: 10.6'-11.6' 3: 16.6'-17.6' 4: 24.9'-25.7' 5: 27.1'-30.0'
	1		LT. GRAY F TAN	FISSIL	D: 3.8	1	3: 16.6'-17.6' 4:24.9'-25.7'
-	3		1		9.0		8: 37.8 - 38.8 7:41.9 - 42.9
526.8	9.5		2.5' to 10.6'		To	Box 1	8:37.8'-38.5' 7:41.7'-42.7' 8:47.4'-50.4' 9:55.6'-56.6' 10:60.8'-61.5'
1			9.5" TO 10.6" SANDSTONE: CEME MOD. WEA: NON-CA MOD. HARD; BRN1 10.6" TO 43.6"	NTED;	10.3		10: 60.8 61.8.
15.7	10.G			AN	10.6	5	
	=	4 3	WEA; NON-CALC.; N	HOIST;	D:4.2 R:3.6	2	III WATER LEVEL
	=	\$ 3	SCAT. SS SEAMS & L	HTS; W/	REC.		TO 57.0 ON 16 MAY.
	=		MED GRAY W/ RUST I	OWN TO	14.1		BORING HAD CAVED
	=		12.1-12.7 TIGHT 6	TAMES JO	ist.	14.1	PLASTIC PIPE WAS PLACED TO 46.8'. No
		5		d tr. GRAV	14.8		FREE WATER ABOVE "CAVE-IN" AFTER 24 HRS.
	=		14.1-18.1 HED GR	AY W	D: 4 -		
	=	5	PLANE, W SELL VEINING & POC		REC.	2	
	-		16.4 - 16.6 : RUST R	B SILT-	T-	3	
	=	5	16.6-17.6 TICHT	JOHTS			
	=		18.1-25.4 DARK	eray wj	18.8		
	=	S					
}	200		20.0 : TIGHT JO 20.2 : RED STA 20.2 - 22.5 : S TIGHT STAINS	INT	D: 4.0	12.7	
	=		20.2' - 22.5': 5	CAT. Joints	D: 4.0 R: 4.4 REC	Box 3	
İ	3				22.5	3	. 7
	3						
	=	8	r.		22.6		
	=				D: 4.0 R: 3.4		
	=		C man		Ree	_	
	=		25.4 BASE OF	WEA.	26.4	4	
	=		FISSILE, W/S	46 4		_	
	=		Littlets, bic.	SHAY BLK	26.8	Box 4	7
	3	-	27.9': Sour ca :	an-	D:4.0 R:4.4		
	3	4	27.9 SOFT SS 1 28.1 + 19.3 SOFT 28.7 SCAT. SOFT	57.58AM	REC.		
	=	744	24.0'-24.2': Sor 24.4'-30.2': Sor		30.8	F	
	- =					5	
	三	n	30.6 SOFT SS 1	E LT	30.8		
	3	4	GANY SE N	UTT) ASS	D:4.0	Box	
	3				REG.	5	
	3				70 34.8		
		1	50000				
	1	>	34.6 - 34.8 : LT. 4	RAY	24,8	34.6	
	3		SILTSIONE C	- 	D:4.0		
	=	454			RI4.0	Ber	
	=				To 38.8	Box 6	
	lunhunhunhun	3				ل	
	=	- 1				6	
- 1	=	3			38.8	J-1	

	1	10.00	D: 5.	404	
	-		RIGG.		
	3935		7>		E
	-		43.8		
	3			7	
		434-488 SMW WALE		Box	
2.5	13.8	43.8' To 53.1'	43.8	7	
	= ::::	SANDS TONE : SOFT; THINK		1 '	
	3::::	CEMBATHO; MOIST; GRAY TO	D:4.0		
	==::::	BARK GRAY	Rac.		
	3::::	PLANES & WAS UNABLE TO	TO	45.8	
	1 -3::::	CARTON FROM 43.5'- 49.4'	47.6		
		¢ 20.4 82.1.	1		
	l -∃∷∷			n	
	3::::	47.9'-49.4' intractions	47.8	Box B	
		W SHALE	-		E
			D:4.0		F
	-1:::		R:4.2		E
	1 = 1		Rec.		
	-		51.4	8	E
	-	\$9.4'-51.4' in \$200000		4	E
	-3::::	W SHALE			E
	3::::			214	
	-		5:4.6		F
	3::::		R11.0		E
3.2	53.4	53.1 To 54.0			
	38.5	SANDSTONE: WELL CONSTRUCTED HARD; CALC.; LT. GRAY	D: 2.0	Box	E
2.3	54.0	53.8'-54.0'; INDICATES	Rec.	9	_ F
	3.00	A CHUISE IN DEPOSIT	To	/	E
	1 4	CONTAINS ANGULAR	54.7		
	3	TO ROUNDED LT. 4 br. ROCK FRAGMENTS,			E
	1 4 *	SILTSTONE FRAG. 4	-TK. 6	9	F
	3	54.0' TO G1.8'T.	D: 3.3		E
	= 1 1	SHALE: UNWER; CALE, W/	R:4.1	57.0	E
	3	LINY STREAMS: FORM: FIRSILE	To .	12-4	E
	1 -1	W/PYRITE; MOD. SOFT; GRAY 54.6'-84,5' PYRITE SHOP	58.8	Box	E
	∄[_]			10	E
	1 4. 3		59.1		‡ t
	1 1				E
	CON	54.1" SLICK	D:2.7		
	1 22		R:30		E
	-1-		GL. d		E
					E
1.5		T. R. G1.8'	GT.B	44.8	E
	=				ŧ
	=				E
	1 3				
	1 -1				

BOILLING LOG Acrilla Jeko - Baback Failing 150 100 -C 56.01 to 57.31 G. Schoonever Gray to white, fine to med. grained, very sendy in upper part, gyritic, whisps of black shale, and knot flow stuctures at base 54,41 mather TOTAL DEPTH OF HOLE 60.0 56.0' - 56.9' gray-brown with jongues of white 45' to be ggritic. 57.0' pyrite sem 0,0 1. 8" Flight Augur 0.0' - 2.6' ավագետերա CLAY -. Back horms, here, sli. sendy, high plasticity, sli. maist, mn-calc., motlets. 57.51 to 60.01 6" Core Barrel 7.1' - 60.0' Missond bit 56.1' - 60.0' 2.61 Bark gray, silty, soft calc., sli. fissile, soat. fossils. 0.6' to 5.6' CLAY -2. Jares A10.0' - 0.6' B10.6' - 2.6' C12.6' - 4.6' B14.6' - 7.1' Orange brown, hard, high plasticity, moist, quartisite gravel, men-cals., motlets. 5.6' to 27.5' 3. Cartons: 5. Cartons:
C-1: 7.1' - 8.1'
C-2: 19.1' - 20.0'
C-3: 23.6' - 24.6'
C-4: 27.5' - 26.5'
C-5: 32.5' - 33.5'
C-6: 30.5' - 39.5'
C-7: 44.0' - 45.0'
C-8: 51.4' - 52.2'
C-9: 59.0' - 60.0' D: 3.0' Gray, weath, orange stained fractures and joints, soft, mon-cale symiferous partings, ironatone modules, int-bedded mon-cale. Sund-stone and siltstone, thesils. to 9.51 LzO.B 10.1 212.3° 4. Beathereing to 27.5 to 12,4 5. B-logged Sing. '75 Perferenced plantic pipe set to 60.0' L:3.1 17.1° - 17.5' gray homo secous, seedy, olayer 28:5.0' shale, peppored with 3:2.0' speaks of black fisail 19.0' remains. 45.4' to 53.2' 3:4.2° 3:4.2° 3:00. 50 22.9° Grey-brown, soft, fine to med. grained, non-cale, open fractures along bedding planes, fossils, sil. shaley, from 45.4' - 48.9' along sost, '8' calo., white modules in sandstone. 24.7' irons 49.4' - 51.2' shale w/ whisps of white ohlo, sendstone, soat, oreme colored olaystone lenses. Back gray, uncenthered silty, vary, interbelds exceededed send-rione luness and seems, form non-cale, seat, mon-cale, siltstone luness, 51.2' - 53.2' gray sandy shale. 53.2' to 55.5' to 32.5 20,2º siltotone nodale 29.9" - 32.5" sort. eman-bedded sandari lement. Gray white, sandy, momerous black feasil frags. sli. friable, mod. hard, pyritic, siltations modules, apparent unconfermity at base. 3:4.0° 55.5' to 54.4' Gray to black, sale., apparent dip of 10° 36.81 - 40.01 soat. non-oale, miltetone leases and some. 37.31 SYM DO HO. ACTION DATE 3:4.1' 3:4.1' 3:0. 50 U.S. ARMY ENGINEER DISTRICT, FO CORPS OF ENGINEERS FORT WORTH, TEXAS ===

RECORD DRAWING-WORK AS BUILT

7

TO ACCOMPANY FINAL FOUNDATION REPORT

EMBINEER: ------

41.9

D:4.0 R:4.3 Rec. to 45.21

45.91 80 x

10 49.4

D:4.2*

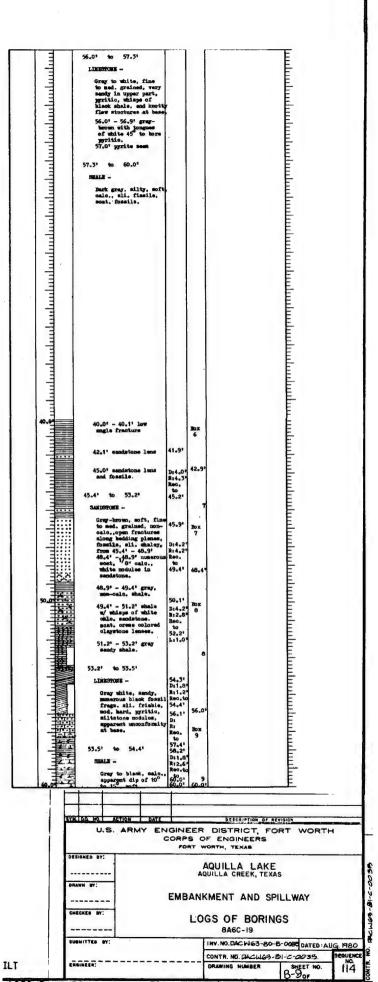
34.4 56.1

60.0

DESCRIPTION OF A

AQUILLA LAKE

EMBANKMENT AND SE LOGS OF BORIN 8A6C-19 INV. NO. DAC W63-80 CONTR. NO. DACHES-

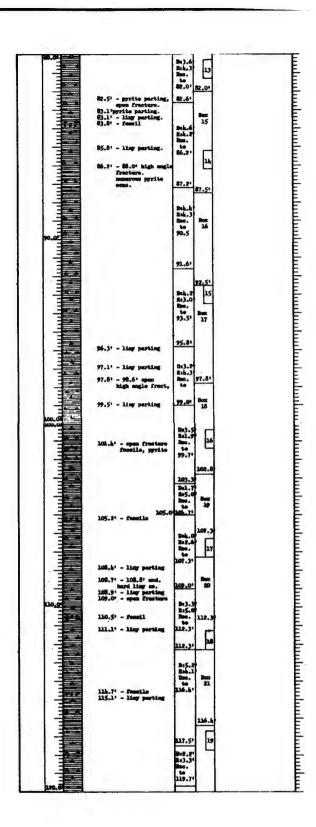


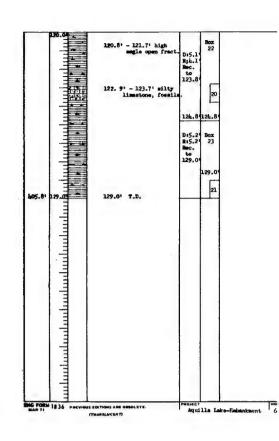
ACCOMPANY FINAL FOUNDATION REPORT

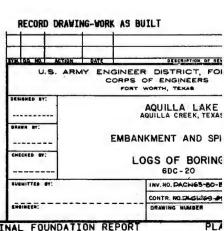
		7	SMD	SHYALI			Mole No. 62C-20
	LING LOG		SMD abanicaent	IO. INTE	AND TYPE	E OF 181	6° Carboloy
LOCATIO	090,110		r: 84, 370	12, 124	DEST		
VSC2	o Authory			12. 707	Failing of	g 1500	MATURES MARKET
MOLE NO and ple o	00111.00		6DC-20		AL INCOME		
T. S	Suite on of Hole	_		M. SAT	_	1074	4160 (440) 4760
	15 OF SVERI			17. ELE	VATION TO	-	July '73 26 July '73
. BEP TH D	-	POCK	128,0"	10. TOT.	-	HIPPET	TOTAL
LEVATIO		_	129.01 CLASSIFICATION OF MATERIA	<u>.</u>	3.500	200	M SCHOOL S
534.81	0.01				- Carry	0.0	
533.81	1.0,=		0.0' to 1.0'			1.0	1. 8" Flight Auger 0.0' - 2.6'
73,40	1		CLAY -				6" Demison barrel 2.6' - 6.6'
332.81	2.0	:::	Gray-brown, sli. m	icity,		2.01	
	E	:::	cale., silty, w/ro	CHINA CO		2.61	6.6' - 129.0'
531.21	3.6	:::	1.0' to 2.0'			(4.5	8" Casing set to 23.0"
	1		SHALE -				5.0
			Gray & tan, soft, calc., silty.	11.		18-2	2. Jare: A: 0.0' - 1.0' B: 1.0' - 2.0'
	1 1		calc., silty.			(4.5	Ct 2.0' - 2.6'
	1		2.01 to 3.61		6,61	6.61	B: 2.6' - 4.6' R: 4.6' - 6.6'
	4		SANDSTONE -				
			Tan, v. poorly cen		Dals.2' Rak.1'		3. Demison case: 98-1 : 2.6' - 4.6' 18-2 : 4.6' - 6.6'
]		fine-grained, ali.	calc.	to 10.71		MD-5 1 P'0, - 0'0;
	=		3.61 to 18.41		JU. 7'	1	k. Cartons: C-l : 8.6' - 9.6'
	10.0		SHALE -			4	G-2 : 12.2' - 13.2' G-3 : 17.k! - 18.1
	1		Olive-gray, w/stree rust color, soft,	ks of	10.8	Box 1	C-1 : 8.6" - 9.6" C-2 : 12.2" - 13.2" C-3 : 17.4" - 18.4" C-4 : 33.3 - 32.3" C-5 : 35.9" - 36.9" C-6 : 42.3" - 43.3" C-7 : 53.9" - 54.9" C-8 : 58.6" - 59.6" C-9 : 62.1" - 63.1" C-10: 67.0" - 68.0"
	1		fissile, non-cale., seat, tight frature		Dz4.0*		C-6 : 42.3' - 43.3' C-7 : 53.9' - 54.9'
			scat, tight frature highly weath, sele	mite	1:3.61 bec.		C-8 : 58.6' - 59.6' C-9 : 62.1' - 63.1'
			8.1' - Bust-red ire	an-	16.3°	2	C-10: 67.0' - 68.0' C-11: 70.4' - 71.4' C-12: 76.1' - 77.1'
			stone 11.1'- Selenite ser				C-111 00.1' - 01.1'
	1		13.6'- Selenite ses	-			C-14: 85.2' - 86.2' C-15: 92.5' - 93.5' C-16: 100.h'- 101.h' C-17: 106.3'- 107.3'
	1		16.4' to 27.0'		14.60	Book 2	C-17: 106.3'- 107.3'
	1		SAMOSTONE -		Dzk.h*		C-18: 111,3'- 112,3' C-19: 116,7'- 117,7' C-20: 122,8'- 123,8'
			Olive-gray, gray &	red,	ec.		C-21: 126.0'- 129.0'
	1		soft to hard, parti	0 c	19.2"		5. Wenthering to 50.0*
			fractures w/iron at shale seam.	ain,		Н	,,
515.4	18.4			y		20.17	
	1 -1.		19.2'-21.5' - poerl cem., broken		19.21		
	28:81	:::					
	E				Dale O		
	3:				Rais O	3	
١. ١	1 =		SANDSTONE (contd.)		23.21		
	3		23.1'- 23.2' - shal			23.1'	
	1		23.6'- 27.0' - har		23.2'		
	=		eale. sendster w/seat. kigh	mgle	Dai.6		
	=		iron stained : tures	rec-	to		
			27.0' to 53.6'		27.8	-	
	27.0		SHALE -				
507.81	27.0			.			
			Alternating 1t. & c gray color, seft, a cale., both horises		27.81	27.81	
	丰		h high angle fracts sease of weath, gue shale of orange & a	ures.			
			brown color, inter-		D:3.8		
			stone and claystone modules and lesses		to	S S	
	事				29.81		
			27.3' - 27.8' se. 1 27.7' - 27.8' se. 1 28.7' - siltatore	-	31.61	H	
	-		27.4' - 29.8' slies	men-	B:3.2	h	
			29.8' - 31.1' watt	.,	R:3.31	33.11	
	重	7	32.7' - 33.1' tight fract,, 15' te		Noc. 10 33.1		
	1						
	1		33.1' - 33.5' gammy red-bym. 34.6' - 34.7' silts		34.81	6	
			35.1' - 35.h' as. o		2:3.1		
			36.9' - 36.5' kish-	e.	Br),8 Rec. te	5	
	1		open fracture	•	36.91	Ľ	
			lennes A nede of elaystone	742	37.91		
	1						
	1				Sec.	39.11	
					16.6		

	0.0	10.6' - 12.3' weath. gamey, erange.		B	
			41.8º	7	
	- 122		200		
			De3.2' Re3;6' Rec. to Mr.2'		
			to	6	
			P# -5,	14.21	
		16 04	LE OF	- 1	
		15.0' - miltateme lene	15.0°	Bux	
		45.7' - 45.9' silatona	D:2.8 R:3.2 Rec. to h7.k*	8	
		\$6.7' - elaystone mod.	to		
		17.h' - 10.6' wath.	47.4°		
	畢	47.4' - 10.6' weeth. game, black.	17.81		
			Bah.21 Ryb.hi Rue. to Sl.81	19.0	
	. E		Bue.		
			2.8	Box.	
			8.0	1 1	
			But O	52.8	
1.21	93.47	53.61 to 60.61	2:3.7		
		SAURDSTONE -	B:4.0 2:3.7 hm. to 55.5	7	
	38	Gray-bon, and, hard	33.5*		
		Orny-hm, mod. hard, mon-cale. in upper section to all, cale. at bess, interbedded dr. gray soft shale.			
	事業	at base, interbedded	56.00	10	
	1 1 1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	Con Constants.	Dak.69 R:5.1 Rec. to	-	
		53.9' - 5k.9' shale freg. perallel to	Rac.		
	1 1 1 1 1	53.9' - St.9' shale frag, parallel to bedding in ss. 55.2' - 60.6' inter-	60,61	58.61	
	1 3 3	becided so, & shale			
	本語			8	
	60.00 60.67			4	
4.21		60.6' to 63.8'	60.61	1 1	
	- 15	LIMBTONS -	B:3.7	-	
			R:3.7 D:3.2 Rec.	Dex 11	
		Greg-brn to white, hard feasiliferous, merror omessituations of an undricomined dt. mineral along bedding.			
	1	undriesmined dt.	63.8	2	
12.00	63.80				
		61.0° - & mineral	44.31	1 I	
		63.8" to 129.8" T.D.	Beh.S Rah.2 Ras. to 68.0	64.0	
		SMIR -	Dec.		
	-	Alternating gray and	48.01		
		der.grey, seft, cale.,			
		ling partings, seat.		20	
		Alternating gray and dest gray, selt, cale., alt. fiscile, sest. liny partings seat. pyrite partings & cons., cont. femals.		2	
		4 1 7 3 3	48.8	12	
	70.0		D:3.8		
	79.00	V - V -	Dr3.8 Rr3.h Rec. to 71.h	71.1	
			72.4	11	
	1				
			72.60		
			D:3.7 2:3.6 Ibe. to 75.0	13	
		1	te.		
		1		. 1	
			75.00	1 1	
			75.0		
			76.31		
			76.31	122	
			76.31	12	
			76.31	Н	
				30 K 31	

seath.		Best 7	Ī
	12.8° Be3:2° Re3:6 Rec. to 14.2°	7	
one lane cilatone one mod.	D:2.8 R:3.2 Rec. to	Best 8	
weath. lack.	Did. 20 Richitano. to S1.81	kg.o	
	9:4:0: B:4:0: B:3:7: be- 55:5:	,	
hard, pper, , calc. bedded shale. stale rallel to in ss. inter- s. & shale	56.01 Dik.61 R:5.11 Rec. to 60.61	Pace 10 90.64	
ndte, herd, , nerrow ed an dc. bedding.	60.6* R:3.7 D:3.2 Rec. to 63.8*	-	
rey and t, cale., seat., p & come.,	64.3° Dak.5 Rak.2 Rac. 46.0°		
p 4 cms.,	68.61 313.8 R13.4 Rec.		
	72.61	րո	
	203.7 203.6 200. 10 75.04	13	
	B12.7 R12.7 Rnc. to 77.7° 79.0°	Bose 114	







	Be3.6 Rris.3 Rec. to 82.0*	13	
82.5' - pyrite perting, open frecture.	82.61	uz ,U1	
82.5' - pyrite parting, open fracture. 83.1'pyrite parting. 83.1' - limy parting. 83.8' - fearil	Bek.6	Bex 15	
85.8' - limy parting.	Bek.6 Rek.2 Rec. to 86.21		
85.21 - 88.0° high angle fracture.	80.2	14	
numerous pyrite	87.2'	87.5	
	Dak.k Rsk.3		
	Dok.k Rik.3 Rec. to 90.5	36 26	
	57.41		
	51.61	92,51	
	103.0 103.0 10 10 10	15	
	93.51	Best 17	
\$6.3' - liny parting	95.81		
97,1' - liny parting	Dr3.2 Erk.3 Inc.		
97.8' - 98.6' open high angle fract,		97.81	
99.5' - limy parting	77.0	18 18	
101.h' - spez frestere	Be3.5 Rel.9 Rec. to 99.7	16	
101.h' - open frecture female, pyrite	10 99.71		
	103.3	202.8	
	Del.7 Dej.0 Rec.	Best 19	
105.2' - funcils		107.3	
	304.0 B:2.4 b:: to 107.3	27	
105.ht = list parting	107.3	_	
108.7' - 108.8' mod. hard liny so. 108.9' - liny parting 109.0' - spon fracture	209.04		
110.5° - fessil	Br3.3 Br5.6 Bre. to	112.3	
111.1' - liny parting	112.3	100	
	B15.2		
11k to a Accesso	345.1 246.1 246.1	Berr 21	
11k.7' - funcils 115.1' - lisy parting			
		336.4	
	017.5°	1.9	
	2:3.3 Sec. to 119.7		
	E	_	l

	120.04				
		120.8' - 121.7' high angle open fract.	D:5.19	Box 22	
			D:5.19 R:4.19 Rec.	1	
			to 123.8		
		122. 9' - 123.7' silty	123.0	-	
	3,77	limestone, fossils		20	
			124.8	124.8	
			D:5.2	Box	
			Rec.	23	
			to 129,0		
				129.0	
	- N			21	
05.81	129.0	129.0' T.D.			
	3				
	4				
	3				
	4				
	1				
	3				
1	3			. 1	
	3				
1	-				
	=				
	ավայրակավումակական				
]]				
	-				
	E				
	1836 PREVIOUS		PROJECT		HOLE NO

RECORD DRAWING-WORK AS BUILT DESCRIPTION OF REVISION U.S. ARMY ENGINEER DISTRICT, FORT WORTH CORPS OF ENGINEERS FORT WORTH, TEXAS AQUILLA LAKE AQUILLA CREEK, TEXAS EMBANKMENT AND SPILLWAY LOGS OF BORINGS INV. NO. DACHES-80-8-0000 DATED : AUG. 1980 CONTR. NO. DAG 1259-01-2-0095 B-100F PLATE 41

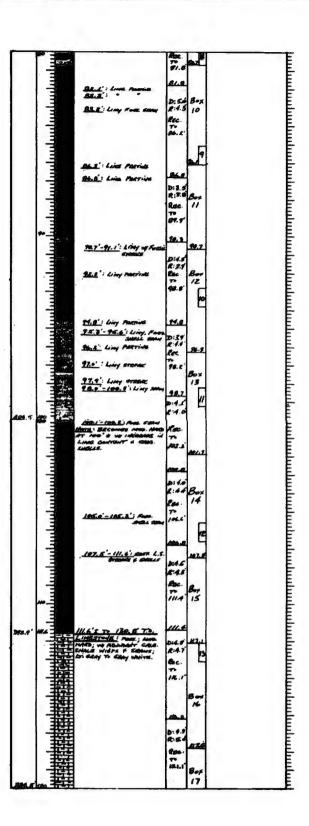
TO ACCOMPANY FINAL FOUNDATION REPORT

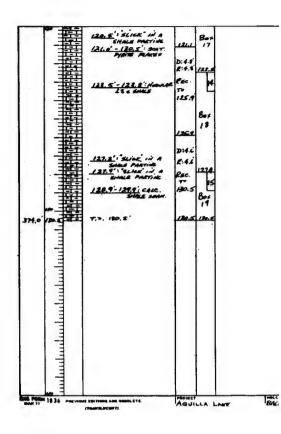
5

STP 131		SWP	IL SEE	FW.	D	the No. RAGE-19 or 7 means
44	Man S	Y: 84.000	W. BRIT	MS	ture man	College De College
	- C.			FAIL	into .	SOO CONTRACTOR
W AP	TO THE	BASC-14		AL INCOME	n cont	ATENT CON CO.
npe tr	-		19. BL	TVATION T		July 75 18 July 75
romae Prim () Trial ()	M OF DVERGURE MLL-SO DITO BO EPTH OF MALE	=10251		AL COME		TWO FOR STATE OF THE STATE OF T
ATTAC		GLASSYSHEE OF GATT		1	The Co	- The state of
ø. 5.	***	O.O. TO B.3.	nim:		0.0	I Deittide!
	1 - 1	EM. How CALE.; BL	e.			JOF FLORY RUSER: 0.0' - 27.3' 9 % Rought 27.3' - 31.0' Set & Chains to 21.0
	1 = 1				A	
	=	8.5' To // 0'			2.5	31.0' - 130.5'
	-	CLAY MOIST; ST	ing;			TO BALL AND DEEDER
						STOREME. MONEY PIE
	3				B	H. Saupers
	3	-				BUSTINGED (JACK):
						C: 9.5' - 11.0'
					AS	F: 18.0' - 19.5'
]]				c	N. 24, E - 25, B
	adumbuntundun Surbanjunikanbantunkankanlankanlankanlankan					C-1: 25.7'- 27.6'
	-	LAY: WITTREE OF MOIST; STIFF; SU	SAND;		11.0	
					D	5' 56.4'-57.4' 6' 68.6'-67.4' 7: 74.2'-75.2'
		13.0 TO 25.8 CLAY: SANTY; MED. TO V.MOIST; MED. RUSY TAN	ar Date		13.0	9: 79.8' - 80.7'
		RUST THAT MED.	7- 5799	2		10: 42.8' - 43.8' 11: 78.2' - 49.2' 12:105.6' -106.6'
	-				_	18:112.1' - 1/3.1' 14:122.5' - 123.6' 15:121.9' - 128.9'
	1				E	Billianus Liever :
	=					PLACED IN BARNE TO
	1	400'0			M.O	TO BILD'S WATER CAME TO STATIC LEVEL OF 10.5' HA FEW MINTERS
	3	180'1: V. MOIST	- M(1, 0.		F	
	1	19.81-25.81 be	CREASE		19.6	
d af	200					
	-				G	
	=					
	=				24.5	
	1				H	
	1	Z.S.B. To ZB.B' +	CAPT		25.8	
	1	Z.S.B. TO ZB.O. + CLAY: SONDY; MY SO GRANIEL; MED.; V. TO SOT.D.; TOU	Mover		1	
.5	10.0	20.0't . 19.6'	_		28.0	
		TO GOT. D.; TAN SANDETONIA EMBLE SANDETONIA EMBLE 38 & SHORT SIMILE, 18 & SHORT SIMILE, CANPY SIMILE, CANPY SIMILE, CANPY SIMILE, CONTROL CONTROL SIMILE, METERS CONTROL SIMILE, METERS CONTROL SIMILE, METERS SIMI	Surr		J	
	. #	MOIST; WILLER; BL	15 cay		19.3	
	世	CLAYBY SEN) Marso		-	
		there: Lour Sto's	81.4"	D: 4.4 R: 3.0	21.0	
		AND CHEFUL STANDS	24 7	R: 3.0		
				34.4	Box	
				1.00 21.0' - 21.4		
	3 MS			85.4		
				D:2.6 R:1.9	2.0	
	-1:40			Rec		
			SS SSMS;			
	1		ESILS; LT: GAN	38.2	1	
	-		SS SSAS; Cr. Gay		Box 2	

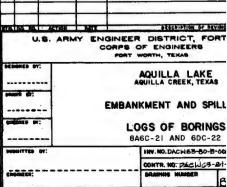
ľ	MELE; WANDONCE (5 # MITE + CLANSTWEE; ST. GOE	19. 3 de. 9		
	SHALE : WHEA : CALC ;	B:4.6 R:33	443	4
	MOD SOFT; FIRSILE; W SORT. LINY STERNIE F RES	Cec.		
1	43.0' : Liny STERM	436	2	1
1				
			Box 3	
	45.2'-46.2' BEAT, Lines	-		
		DIZ.	1	
300		4:24	1 0	
		Rac. 70 47.2	47.7	
		1,		1
-	19	42.0		
		D: 4.0	8	
A.,	#0.1'- SI S' Soir Line Meries	2:4.3 Rec.	Box 4	1
7		51.5		
F	11	3,		1
1	1 189.91 Jaim mani-		4	1
	53.9 Line Patrice	520	52.5	}
	F35'- 56.5' SOFT, Lines	D:4.0		1
1		Rac.		
	3.0	55.7	Box 5	
1			5	
- 3		57.0	5	1
- 4		2.44		ł
		2:42		
- 3		Rec.	12.2	
		51.9		
			Boy	
		200	6	
		D:25		
	AZ.S. Lina Parries	Rec		
		68.5	425	
		10-		
30		D: 43		1
10		2:45	Boy	
300		Asc.	7.	
		60.0		
	60.1' Line merine			
	MARIE MARINE	68.8	606	
			6	
	70.0' - 70.2': Liny Same	D:4.6	4	
1		Lac.		
		18c. 7. 72.6	E-=	
	22.4's Line Preting		0	
	28.0' - 78.3': Liny Sans	72.8		
1844	THE STATE OF THE S			
		D:1.6	H	
		Rec.	7	
===		76.8		
	76.1 - 76.6 THESE TIGHT 45" PERC.	1		
			Bar	
		776	Bar	
-	70.6': LINY PARTIME	D: 1.2		
N 79-18	,	5.0		

Bay 5

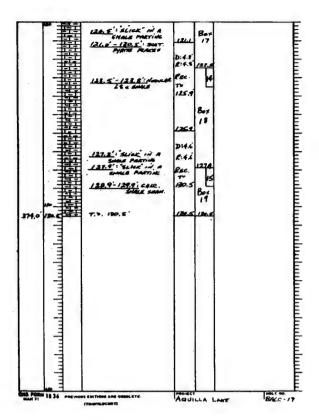


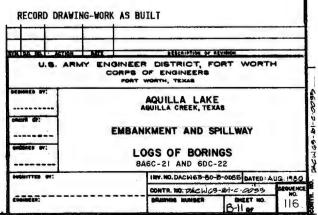


RECORD DRAWING-WORK AS BUILT



TO ACCOMPANY FINAL FOUNDATION REPORT





ACCOMPANY FINAL FOUNDATION REPORT

LLING LOG	54D	PWT)		Hele No. 8A6C-23
illa Lake - Es	bankment	N. MIK A	LOW AL	EVATION	64 Carboloy EHOWN (783 - MEC)
G AGENCY		FAI	ling.	1500	NATION OF BAILL
E-C 0 (As around an aroun	8A6C-23	12 TOTAL	NO. 07	OVER-	N 14 0
Suits			1710H \$1	N COME B	ONES 10
TICAL THELIME	DEC PROM VENT.	M. SATE			
ESS OF OVERBURDE	52.9	16. 7 ST AL	CORE	ECOVERY	FOR BORING
CEPTH OF HOLE	59.41	- beana	Kill	INSPECT	1 Ti Aleun
	CLASSIFICATION OF MATERIAL (Department)		AECOV-	BOX OR SAMPLE HO	(Drilling sizes, series from depth of woodbaring, och, if eignificand)
0.01	0.0' to 1.5'			0.01 A	1. 8" Flight Auger
=	CLAY -			1.51	0.01 - 6.51
1 3-	Dark brown, silty, calc., moist, high plasticity, w/round	non-		1.2	6" Core Barrel 6.5' -
1 =	plasticity, w/round surface pebbles.	ded		В	Diamond Bit 50.0' - 59.4'
1 = 3					
=	1.5' to 1.0'			4.01	2. Jars: A: 0.0' = 1.5' B: 1.5' = 4.0'
1 3				C	0: 4.0' = 5.0' D: 5.0' = 6.5'
1 = = -	Black, silty, non- moist, high plastic	city		5,01	Dr 5.0" - 6.5"
1 =	h.0' to 5.0'			D	3, Cartons:
	CLAY -	1	6,51	6,51	C-1: 13.3' - 14.3' C-2: 19.9' - 20.9'
	Orange-brn.& gray	./			C-3: 27.6' - 28.5' C-4: 30.2' - 31.2'
	white gyp. streaks, high plasticity, =	oist.	D:4.79	Box	C-5: 34.2' - 35.2' C-6: 38.1' - 39.1' C-7: 45.5' - 46.5'
	sli. calc.	,	iec.	1	C-8. L8 21 - L0 21
	5.01 to 6.51	1:	10.71		C-9: 52.0' - 53.0' C-10: 55.7' - 56.8' C-11: 58.4' - 59.4'
10,0	CLAY -	- 1			
1					4. 4 ¹ /4 * Bockbit 59.4' - 90.0'
	Tan, sandy, moist, non-calc., low plas ity.	stics	11 61	11.10	E-logged 3 Agg, 173
	10,				
	6.5' to 8.6'	1	D:4.11		
	SHALE -	1	Rec.		
3	Gray & tan, badly w	weath.	to	1	
	ded sandstone, sand	dy			
	6.8'-7.0' hard ss.,	1	15.61	Box 2	
1 1	tan / orange. s			•	
-3	fine-grained 7.0'-8.6' sandy	,	013.4	17.09	
	8.6' to 8.9'	- 1	R:4.39	11.0	
3	SANDSTONE -	1	to		
]],		- 1	19.0	Box	
1 7	Light gray, hard, i grained, calc., bro at the base.	own	7,0	3	
20.0	8.9' to 42.3'	- 1		2	
	SHALE -	١,	D:4.8*		
		11	Relabe		
	Gray to dk. gray, a non-calc., scat. ti orange stained joir	ight	to		
-	soft, scat. ss. sea & cross-bedded as.	ала	,,,,	22.7	
	scat. silstone sear	ms I	23.81		
	14.6'-14.7' mod. he	ard		Box	
	siltstone, non- weath, outer or 14.7'-19.0' v. soft	range	0:4.0	4	
	weath., gummy, orange stained	1	1:4.2' lec.		
	joints. 19.3'-23.0' scat. s	milt-2	to		
	stone lenses, r	nod.			
	24.0'-28.2'scat. so sand lenses, cr	oft ross-2	7.81	27.61	
- 1111	bedded. 30.2'-35.8' sandy s	shale			
	scat. siltstone	1 8	0.4.0	Box	
		1 1	1:3.61 lac.	5	
30.0			to	Н	
				la l	
1		3	1.81	٦	
		ľ			
		г	0:4.0		
		3	114.69	33.51	
			to 5.81		
				5	
		3	15.81	4	
1		1			
		r	13.31	Box 6	
		R	tec.	•	
		R	to 9,1	٦	
	39.6'-40.0'badly we gummy, tight hi angle fractures	3	to 9.1	6	

-				
		D14.71		
		R14.61		
	42.3' to 49.7'	to	Box	
2.30	SANDSTORE -	43.7	7	
删		1		
	Gray, med. to fine-			
	grained, prosabedded, interbedded mod, hard	43.81		
-3:*::	te soft sandstone, calc			
3.5.5	mon-calc, shaley portion	43,	44.61	
	pyritic, w/oreme colored			
=::::::::::::::::::::::::::::::::::::::	segar and leases.	D:4.2'		
7::::	42.5' - 43.2' moft	Rec.		
34.4	shaley sandstone 43.2' - 43.7' hard, cale	47.9	7	
≒ ::,::	43.2' - 43.7' hard, call sandstone, w/low	1.7/1.5	Box	
4:00	annia december		8	
3***	44.0' -44.3', 47.5' - 47.7', zones of hard sandstone.	48,01		
- [12.18]	47.7', mones of	D: 2.01		
-020	47.0 - 49.2 DATE	R: 1.8'		
7. 7	mineral or dark	Rec.	8	
1111	fossil frags, along bedding of ss.	49.7		
0	48.3' - 48.4', 48.7' -	50.0		
- 7	48.8', sems of			
	oreme colored non-			
1	dale, claystone.	D: 3.6'	51.2"	
		Rec.		
	49.5' - 49.7' black mon-calo. shale,	to		
	w/scat, white ss	53.01	9	
7.4	w/scat, white ss whisps, flark fossil			
	frags,			
		53.61	Box	
-	49.71 to 50.01	D:4.3	9	
	LIMPSTONE -	R:3.8		
32 10		Nec.		
700	White, crystalline, fine-grained, pyritic, mod. hard, appearance	56.81		
111	wod hard annearance	~	10	
	of an unconformity at	(1.0	
	bane.	1.		
Ŧ.		111		
		50.1		
##		D:2.4		
7 -		Rac.	1	
4		to	11	
=		59.41		
= 1	50,0° to 59,4°			
=				
∃	SHALE -			
3	Dark gray to black, sli.			
=	calc., fossiliferous, w/sost. orems colored	1		
=	w/sont, oreme colored	L.		
4	claystone sems, limesto seems and open fractures	10		
3	50.7° orese colored	ľ		
3 1	alovet me seem			
3	51.2'open fracture along bedding 51.9' claystine seem 52.0' - 53.0' most.			
=	bedding			
7 1	52.0' - 53.0' scat-			
3 1	OTSÅS FOUR RESER			
크	53.5' - 53.5' low angle open fracture.			
3 I	53.7' 53.9' low angle			
=	53.7'- 53.9' low angle tight fracture			
7 1	53.9' - 55.7' Limestone soft to mod. hard, milty, fossiliferous	1		
3	milty, fongilifarnus			
=	gray.	ľ		
4	55.2' open low			
n danlankadankadanlankadan	smale fracture. 55.7' - 59.4' dark gray	[
=	to black shale, calc			
-]				
∃ I				
		1	1	

7 6

8

-2°

9

10

11

DRILLING LOG 16. TOTAL HUNDERS CORE BOSES 0

18. ELEVATION GROUND WATER

18. DATE HOLE | 173 | 1 Aug. 173 | 1 Aug. 173 | 17. ELEVATION TOP OF HOLE | 500.51 16.0° 2.0° TO ELEVATION TOP OF NOLE 502.5

IN TOTAL COME RECOVERY FOR BORNING

W. MERIATURE OF INTERCTOR

MALS SCONE BORN OF COME (CV-87) of the membring than the comment of the comm CLASSIFICATION OF MATERIALS REMARKS
(Delling time, duter hase, dupth of manharing, one, it algorithmen) CLAY -2. Jars: A: 0.0' - 5.0' B: 5.0' - 8.5' C: 8.5' - 14.0' B: 14.0' - 16.0' E: 16.0' - 18.0' Brown, silty, moist, plastic, med. plastic ity, calc., smooth. 3. 24 hour check -water level was 3.0 5.01 to 8.51 5.01 Lt. brown, moist, silty, med. plasticity, calc., soft, smooth, B 8.51 CLAY -Dark brown, hard, sli. moist, scat. caliche, silty, high plasticity calc. C 14.0° to 16.0° 14.0 CLAY -Olive-brown, w/gray & orange streaks, sticky smooth, silty, high plasticity, gypsum crystals, non-calc. D K 16.0' to 18.0' Oray, badly weath., orange & brown stains clayer, seft, non-calc. 18.0° T. B. MAR 71 1836 PREVIOUS EDITIONS ARE OSSOLETE.

SYM AG. NO.	ACTION	DATE	DESCRIPTION OF	REVISION
U.	S. ARM		DINEER DISTRICT, FOR OF ENGINEERS	ORT V
DESIGNED BY:			AQUILLA LAK	
DRAWN BY:	-	E	EMBANKMENT AND S	PILLWA
CHECKED BY:			LOGS OF BORII	
SUBMITTED &	r:		INV. NO. DACH63-80-	B-0085
			CONTR. NO. DACHO	-81-6-0
ENGINEER:			DRAWING NUMBER	SHE
EMBINEER.				B-12

U.S ARMY 173 RECORD DRAWING-WORK AS BUILT DESCRIPTION OF REVISION U.S. ARMY ENGINEER DISTRICT, FORT WORTH CORPS OF ENGINEERS FORT WORTH, TEXAS AQUILLA LAKE AQUILLA CREEK, TEXAS EMBANKMENT AND SPILLWAY CHECKED BY: LOGS OF BORINGS 8A6C-23 AND 8A-24 INV. NO. DACH63-80-8-0085 DATED : AUG. 1980

CONTR. NO. DACHOS - 81-2-0035

DRAWING NUMBER SHEET NO. 8-12-of

CCOMPANY FINAL FOUNDATION REPORT PLATE 43

DRILLING LOG	SED	MSYALLATION BIOCET SWEET S						
quille Lake - B		II. DATUM FOR ELEVATION SHOWN (TEST - ABEL)						
LLING AGENCY		ISL II MANUFACTURE PER DEMONATION OF ORILL PAILING 1500						
SCE-C		SURDEN SAMPLES TAKEN 4 UMDIETURGE						
Schoolover		IL TOTAL NUM IS ELEVATION	GROUND W	ATEM				
		16. DATE HOLE	18	Deg. 173 19 Dec. 175				
PTH DRILLED INTO ROC		17. ELEVATION 10. TOTAL CORE	RECOVER	Y FOR BORING				
TAL BEPTH OF HOLE		N. SIGNATURE	nove of	M. Matheus				
ATION DEPTH LEGENC	CLASSIFICATION OF MATERIAL	EAT	SAMPLE NO.	(Desting time, water feet, depth of measuring, etc., if olgationals				
0,0	0.01 to 3.21		0.01	1. 10° Flight Auger				
	SAND -			0.0' - 7.0'				
	0.0' - 2.0' Tanni	ah	2.01	6" Core Barrel 7.0" - 60.8"				
Ē	brown, silty, sli clayey, med. dens sli. moist, friab	.,		7.0' of 8" Caming was set.				
=	low plasticity, m	OB-	3.21	5. Jars:				
1 = 1	2,0' - 3,2' Orang	e steel						
1 =	tan, vary dense, blue sandy module very clayer, med.	to		A: 0.0' - 2.0' B: 2.0' - 3.2' C: 3.2' - 5.5' D: 5.5' - 6.5'				
5.5°	wery clayey, med. high plasticity, mon-calc, scat.		5.51					
6.57	quartzite coarse : grains.		6.5"	4. After drilling the hole was bailed to 55.4'.				
6.8	3.2' to 5.5'	7.01	7.0*	55.41.				
	2.2' to 5.5'							
	Gray brown, sandy	L:1.0	Nox 1	Set 60.0° of plast: slotted pipe.				
	hard, sli. moist, plasticity, calc	low						
10.0	rounded limestone quartzite, chert, pebbles, angular i	7,0	1	5. Hole was E-logged 21 Dec. '75.				
	orystalline tabula	hard ar	11,1					
	cobbles.	L:0.5	1 1					
	5.5' to 6.5'							
	SHALE -		Box 2					
	Gray, tan, weath., stained, gray pow lminae, sandy, sl	ier, 13.81						
	lminae, sandy, sl fissile, soft, nor	oals.	1. 1					
	6.5' to 6.8'		15.01					
	SANDSTORE -	L:0.2	.					
	Light tan to white		Nox 3					
	fine to med, grain ground up by augor	ied, 17.8						
	ground up by augor no sample.	17.8	1					
			18,74					
20.01								
	6.8' to 57.5'		Box 4					
	SHALE -	21.81	- 1					
	Elue-gray, weather grany, finaile, no sendy lenses, high	n-calc.	22.9					
	low angle fracture	· ·						
	izonstone concreti	lons. 5:0,2	1 1					
	6,8' - 17,8' heavi	Lly	Box 5					
	17.8' - 21.8' very	25.81						
	mandy seems and le	H1.5 00 .	1 1	200				
		C-0 *	27.0					
		G:0.3						
		29.3	nox 6					
70.0			.					
30.07								
		G:0.4						
-			32.2					
		33.81						
			Box 7					
		L:0.7						
37.37			36,81					
[::: <u>E</u>		37.81						
40 01			lox					
7.17.1		L:0.9	8					

37.3' to 52.3'		40,91	
SAMESTONE -	41,81		
Light grey, noft to mod. hard, silty, mon- calo., fine grained, there were heavy more lesses in this mediator Very noft assentations seems washed meany	ĺ	Nox 9	
during drilling.	45.81		
	L: 1.4		
	49.31	48 _e 67	
	L:0.5	Box 10	
52.3' to 52.6'	52.3'		
Light gray, hard, oxystelline, fine- grained, dark gray sand sems,	L:0.3	53,31	
52,6' to 60,4'	56.81	Box 11	
SHALE - Blue-gray, soft, fiscile, whisps of send, non-cab. few soat, fossils.	G:0,21	57.8'	
		Box 12	
T 3.		60_4*	

37.3' to 52.3'

BASERTORY
Light gray, noft to made hard, slity, noneals, fine grained, there were heavy our loses in this audition.

Vary noft sendation.

Vary noft sendation.

Saring drilling.

Lil.4

Lil.4

Lil.5

Box

10

52.3' to 52.6'

LIMSTORE
Light gray, hard, orystalline, finegrained, dark gray

Sand sesses.

Box

10

52.6' to 60.4'

SHALE
Rise-gray, noft, fineils, shipps of
sand, non-oab, few
soat, fossils.

Box

10

57.8'

Box

10

57.8'

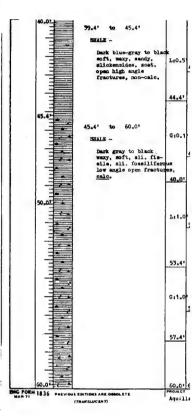
Box

10

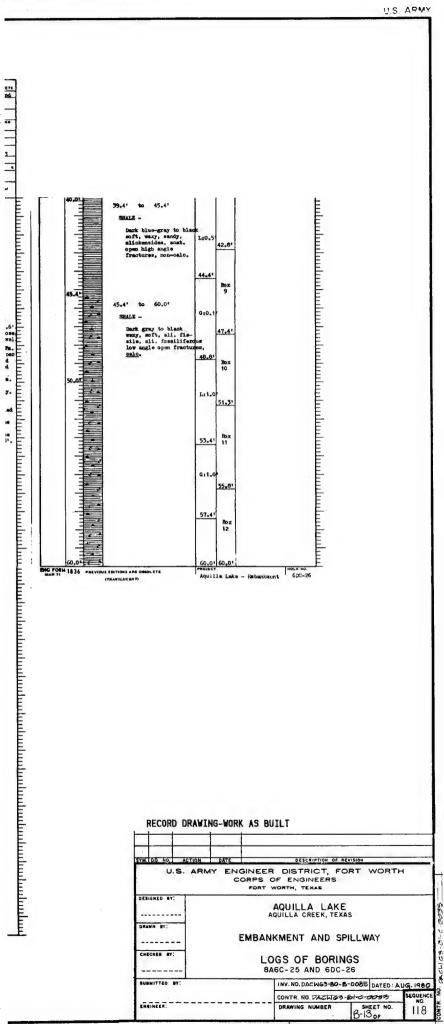
57.8'

SHALE
Rise-gray, noft, fineils, shipps of
sand, non-oab, few
soat, fossils.

Desi.	LING LO	G Br	ASID SED	MAYAL		wn.	Mole No. 6DC-26		
PARTITION			enka ent	10. MIE	MID TYP	ND E OF SHY	6" Carboloy, 6" Dissond		
		an a ha		IE MAN	HACTURE	SL IPI MA	SHATION OF GALLL		
ESCI-	AGENCY C		us Miles	12. TOT	dling	1500 2744			
HAME OF	SANLCER.		6pc-26	14. TOTAL HUMBER CORE BONES 12					
BANKET 10			950. 700u vent.	H. DAT		1074			
		- burnotu				11 27 07 HO	519.1		
BEPTH DE			60-0*	10. BIGH	ATURE OF	HECOVER	7 P. Mathews		
LEVATION		CEOUN	CLASSIFICATION OF MATERIA	4.8	A.Cont	POX OR	(Delling abov, outer leas, dupth of meathering, eas, N algorithmed		
•	9,01		0.0' to 0.8'		•	0,01	1. 8" Flight Auger		
	1	ļ	GLAY -			0.81	0.0' - 2.6' 8.6' - 10.0'		
	1 3	ı		y, sli		3	6" Demison Barrel 2.6" - 8.6"		
	I		Bark brown, silt sendy, stiff, so med, to high pla	ist, sticit	7.	2,61	6* Core Barrel 10.0' - 60.0'		
			mon-calc.		-	228-1	Set 10.0' of 8"		
	1 =		0.81 to 7.61				casing.		
	1		BAND -		C>	4.6°	2. Jars:		
	E		0.8' - 2.6' Brow med. danse, fine med. grained, sa ali. olayey, low plasticity, non-	to	:	Sample	A: 0.0' - 0.8' B: 0.8' - 2.6' C: 4.6'		
	=		med. grained, sa ali, clayey, low	turste	d,		C: 4.6° D: 8.6°		
	3		plasticity, non- 2.6' = 4.9' Brow	calc.		6.61	No sample recovery between 4.6' and 6.6'		
	7.6		2.6' - 4.9' Brow dense, wed. grai low plasticity,	ned,		DB-2	Probably a very loose sandy, pea size gravel		
	=	es T	low plasticity, bearing, non-cal few scat, quarts and sandstone gr	ite	D>	8.61	35.4° of Woodbine Fm. (sandstone and Pepper		
		-1	4.9' - 7.6'±No a	mple		Hole	Shale) was wrapped in wall canvas and		
	10.0	•	recovered. Probe	dy dy	10.0'	10,01	Wax. 14.5' of Del Rio Pa.		
	=	1	pea sine gravel a few 4 on, grav	DEATIN			(shale) was also wrapped in this way.		
	1	7	7.6'± to 12.5'		L:1.0		W man had a man had had		
	1	7	SHALE -			Box 1	5. The hole was bailed to 56.4". 60.0" of slotted plastic pipe		
	12,51			O W.	13,01		After 24 hours the		
			Elus-gray and br weathered, stain soft, sandy, sli	ed,			water level was 2,3'.		
	-		soft, sandy, sli fissile, mon-cal some black deter	o.,	ng	14.51	4. 4 76.0° fishtail		
	3		rootlets.		L:0.1'		was E-logged 15 December 175.		
	=		12.5' to 25.8'						
	1		SHALE -			lox 2			
	=		Dark blue-gray, fissile, waxy, s fessiliferous, n	sandy,					
	1		ORIG., FIRST AND	OPER	17,81				
			low angle fractu tight and open h angle fractures,			18.51			
	=		angle fractures, slickonsides.		G:0.2*				
	20.00								
	3					Box			
	=				21.8'	,			
	1					22.51			
	=								
	Ξ				L:0.1	4			
	=		122-0-1						
	=		25.8' to 26.2'						
	25,61			. //	25.81	26.21			
		Serve Serve	Mack, very soft, med. grained, nor clayey, non-calc.	cel c	••				
	一面	. u							
	4	1 1	26.2' to 29.2'		27.91	5			
	29.11	7. °	SANDSTONE -						
			Gray, eator, med. hard, very lisy, fossiliferous, me	YEST					
	=	7	grained.	-	L:0.3	3 0,21			
	=		29.2' to 39.4'						
	耳		SANDSTONE -			Box 6			
		×		alo.,	12.61				
	=	22	Grey brown, non- med, grained, int bedded seems of a	od.					
	크		very soft seems a	lay	•	33.81			
	=	::2	lignite or black	. 780	G:0.2				
	Ē		along some bedding	esils V		Box 7			
	1		plenes,						
	այնակավաղատիանա	X X X	30.2' - 30.9' Lish hard, light gray, crystalline, fine	-grai	ned.	37.31			
	3		sendy dark gray	*****	37.5'	21.5			
	=				L:0.6				
	39.45					Box 8			
- 4	40.0				39,81				







TO ACCOMPANY FINAL FOUNDATION REPORT

	40.0			
500.11	40.871 1	40.8' to 52.7'		Box 9
		SANDSTONE -		1
	3	Dark gray, soft.to		
	=::::	mod, hard, med,-grain-		
	3::::	ed, non-calo., scat.	42.81	
	3::::	sems of very soft to uncemented which were		45.2
	3::::	often lost in drilling		
	=====		L: 1.1"	
	=::::	52.7' to 53.3'		
	3::::	SHALE -		Box
	====		45.8	10
	=::::	Dark gray, soft, waxy, few lime parting		
]::::	ali. calc., fissile.		
	-3::::		L10.14	
		53.3° to 54.45	210.1	
	_=::::	•	1	
		TIMESTONE -		(D =
	=====	Light gray, hard, ned.	49.11	48.7
	3::::	grained, crystalline,	.,,,,	
		fossiliferous, base		
	50.0	is an unconformity and open fracture due		
	50.0	to handling, minor	L10.6	
	=::::	slickensides.	T10.67	Box 11
	7::::			11
	3::::	54.41 to 61.01		
	3333	54.4 2 01.0		
488,21	52. II	SHALE -		
487.61	53.30	Dark gray to black,	53.11	53.3
	1	moft, fissile, seat,		
486,51	54.424 (lime partings, fossile		
400,5	×	cels.		
			G:0.4*	
			610.47	12
	1		1	
			57.51	57.5
			21.00	21.2
	. = =			Box
	1		G10.3*	13
	#	4		
	60.0			
579.91	61.0	T. D	61.01	61.0
	-			YIAY
	3			
		i		
- 1	#			

52.7' to 53.3' SHALE - Dark gray, soft, wazy, few lise partings, all. calc., fissile. Lit 53.3' to 54.4; LINESTONE - Light gray, hard, sed, 49 grained, crystaline.	45. 81 Box 10
Dark gray, soft to mod. hard, sedgrain- ed, non-callo, locat, 42 means of very moft to uncommitted which were often lost in drilling. 52.77 to 53.37 SHALE — Dark gray, soft, wary, few line partings, sit. calc., fissile. Li 53.57 to 54.41 LIMESTONE — Light gray, hard, sed, 49 grained, crystaline, 49	81 Box 10
and, hard, sedgrain- ed, non-colic., lost. sems of very soft to uncemmined which were often lost in dralling. 52.7' to 53.5' SHALE - Dark gray, soft, war, few lise partings, ali. calc., fissile. Li 53.5' to 54.4; LINESTONE - Light gray, hard, sed. 49 grained orystaline.	45. 81 Box 10
and, hard, sedgrain- ed, non-colic., lost. sems of very soft to uncemmined which were often lost in dralling. 52.7' to 53.5' SHALE - Dark gray, soft, war, few lise partings, ali. calc., fissile. Li 53.5' to 54.4; LINESTONE - Light gray, hard, sed. 49 grained orystaline.	45. 81 Box 10
and, hard, sedgrain- ed, non-colic., lost. sems of very soft to uncemmined which were often lost in dralling. 52.7' to 53.5' SHALE - Dark gray, soft, war, few lise partings, ali. calc., fissile. Li 53.5' to 54.4; LINESTONE - Light gray, hard, sed. 49 grained orystaline.	45. 81 Box 10
seems of very mort to uncommented which were often lost in drilling. 52.7' to 53.3' SHALE - Dark gray, moft, wazy, few lime partings, mit. calc., firelle. LittleSTONE - Light gray, hard, med 49 grained orystaline.	45. 81 Box 10
often lost in drilling. 52-7' to 53-3' SHALE - Dark gray, soft, wazy, few line partings, nli. calc., fissile. Lul 53-3' to 54-4; LINESTONE - Light gray, hard, sed 49 grained crystaline.	Box 81 10
often lost in drilling. 52-7' to 53-3' SHALE - Dark gray, soft, wazy, few line partings, nli. calc., fissile. Lul 53-3' to 54-4; LINESTONE - Light gray, hard, sed 49 grained crystaline.	81 Box 10
SHALE - Dark gray, soft, waz, fee lise partings, salt, salto, fiesels. 53.5' to 54.4; LIMESTONE - Light gray, hard, sad, 49	81 Box 10
SHALE - Dark gray, soft, waz, fee lise partings, salt, salto, fiesels. 53.5' to 54.4; LIMESTONE - Light gray, hard, sad, 49	0.1
SHALE Dark gray, soft, wary, few line partings, ali. calc., fissile. 53.3' to 54.4! Linestone — Light gray, hard, sed 49 grained, crystaline.	0.1
park gray, soft, sear, first parting, sli. calc., firstle. 53.3' to 54.4! Linestone — Light gray, hard, sea, 49	0.1
park gray, soft, sear, first parting, sli. calc., firstle. 53.3' to 54.4! Linestone — Light gray, hard, sea, 49	48.
seary, few line partitings, ali. calc., fissile. 53.37 to 54.41 LIMESTONE Light gray, hard, sed 45 grained, crystalline,	48.
55.3' to 54.4! LIMESTONE Light gray, hard, sed 49 grained, crystaline,	48.
53.3' to 54.4; LIMESTONE Light gray, hard, sed 49 grained, crystaline,	48.
55.5' to 54.4; LINESTONE - light gray, hard, sed 49 grained, crystaline,	48.
LIMESTONE - Light gray, hard, sed 49 grained, crystaline,	48,
Light gray, hard, ned 49 grained, crystalline,	48,
light gray, hard, sed 49	.11
grained, crystalline,	
fossiliferous, base	
is an unconformity	
fossiliferous, base is an unconformity and open fracture due to handling, ainor Lit	0.6 Box
to handling, airor Li	Box
slickensides.	1 "
54.4' to 61.0'	
[
488.21 52.71 SHALE -	
487.61 53.31 53.	1 53.
Dark gray to black, soft, ficcile, coat.	
line partings, forsils.	
486,5' 54.4"d c oald.	
Git	4º Box
-	12
57.	50 57.
\	Box 13
G st	1.34 17
60.00	
579.9' 61.0' T. D 61	O' 61.
3	1
1 1	1

Hole No. 6DC-28

smelt or 4 smalrs
6° Carboloy DRILLING LOG PETD

N. SIZE AND TYPE OF BIT

TI. BAYON FOR ECEVATION SHOP SWD Amilla Lake - Bubankuent MSL. Pailing 1500

1 YOTAL NO OF OVER METURES UNDERTURES DSCS-C 6DC-28 ----14. TOTAL HUMBER CORE BOXES 7. Suits # DATE HOLE | TANTED | COMPLETER |

DATE HOLE | 22 Jan. 174 | 24 Jan. 174 |

11. ELEVATION TOP OF HOLE | 505.51 |

TOTAL CORE RECOVERY FOR BORNING | 5.61 55.41 61.01 CLAMIFICATION OF MA N. TOTAL COME RECOVERY FOR BORNING

D. DIMMATURE OF HIMPETTOR

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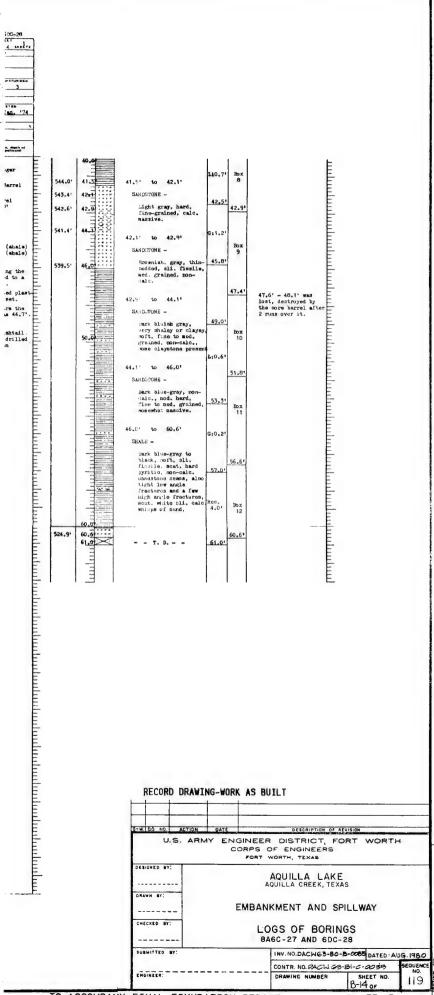
D. STANDARD OF HIMPETTOR

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D. STAN ELEVATION DEPTH OF HOLE 505.51 Surfundamlundur Hulling 0.0 1. 8° Flight Auger 0.0° - 2.6° CTAT -A 413 544.0 6" Denison Barrel 2.6' - 7.6' 0.0° - %.6° Dark brow hard, meist, silty, sli. sandy, high glasticity, non-calc, few scat. quartsite pebbles. 543.4 SANISTONE -421 2,6 6" Core Barrel 7.6' - 61.0' 542.61 42.9 pebbles.

3.6½-5.6½ Clay or olayshale, grayish hrown, w/dark brown and taumish veinlets and pockets, moist, high plasticity, very stiff, non-cale. 2. Jars: 44.1 541.4 A10.0' - 2.6' B:4.6' C:6.6' D:7.6' ₩ 4.6° (mhale) SANDSTONE -DB-2 46,0 539.5 after drilling the hole was bailed to a depth of 58,9°. C> 6.6' 5.6's to 19.1' 7.6'D> 7.6' 50' of slotted plast ic pipe was set. SHALE light gray, weathered, stained orange and dark brown along bedding planes and tight fractures and joints, soft, fissile, seams and lenses of soft to mod, hard sandaton few seat. Ironatone concretions. After 24 hours the mater level was 44.7° SANDLITONE -9.0 L:0.3' Box 4. A 125.0' fishtail. hole was then drilled and E-logged on 25 Jan. '74. 10,00 11.8' 11.6' 11.6' - 16.1' beds have an 8 to 10' dip to hore. SANDSTONE -G10.1' Nox 19.11 to 27.21 SANDSTONE -Gray to light gray, med. to fine grained, soft and mod. hard, non-calc. 15.8' L:0.1 Box 3 566.41 19.17 19,61 61.0 20,8 524.91 Lunhun Box 4 24.51 21.9 L: 2.2 27.21 to 41.51 558.31 27.21 SHALE -Dark gray, soft, non-calo., sli. fissile, whitps of white mon-calo. send, scat. seems and modules of hard claystone, scat, tight low angle fract-ures. 26.81 70.0 30.21 G:0.5

ENGINEER:



TO ACCOMPANY FINAL FOUNDATION REPORT

OJECT	LING LO		SWD	te. sale		D OF SIT	Make No. 846C-29			
		D	banksont (m)	TIL MANUFACTURERS DESIGNATION OF DELL POLITION 1500 13. 107AL DO. OF OWER BORDER SAMPLES VALCES M. YOTAL MANUER COME DORES M. YOTAL MANUER COME DORES A. YOTAL MANUER COME DORES B. TOTAL MANUER						
E CO	AGENCY C									
	DRILLER	on deposits	646C-29							
C. S	choone	ver		16 ELE	VATION &					
-	e4. O	HELMED.	966. PHOM YERT.	_	E HOLE	7	Jan */4 8 Jan. *74			
		RBURDEN TO ROCK	4,8° 35.2°	16. TOT	AL CORE	RECOVER	Y FOR SORING			
TAL O	CPYH OF		40.0°	1	Temas	BOX OF	P. Mathewa			
ATION		LEGEND	(Prosequent)		A COMP	SAMPLE SAMPLE	REMARKS (British time, water free, dept) of medicing, on, it apparent			
	0.0		0.0' to 4.8'			0.00	1 40 Widole Avenue			
	=		CLAY -				1. 10 Flight Augur 0.0' - 7.0'			
	3		0.0* - 2.0* Tem	ıi mir		2,0	6" Core Barrel 7.0' - 40.0'			
	=		strom, sendy, mostiff, med. to i	ist,						
	-		plasticity, cale	3.,		3	2. Jars:			
	=		2.0' - 4.0' Brow moist, sendy, si stiff, high plas	m,		4.0"	A: 0.0° ~ 2.0° B: 2.0° ~ 4.0° C: 4.0° ~ 4.8° D: 4.8° ~ 7.0° (sha):			
	4.8		stiff, high plac	rticit;	,	C 4.8	Dr 4.81 - 7.01 (sha)			
	=		ironstone, sanda	tone,		-				
	3	•	chert, non-calc.	-		,	3. Hole was bailed to 34.6'.			
		4	4.0° - 4.8° Gray brown, sandy, si moist, stiff, hi	lty,			40' of slotted plastic pipe was set.			
	-		caliche nodules		7.01	7.0				
	=	5	5 =.							
			4.81 to 39.61		L:0.4	lox	4. & 70.0' finhtell			
		1	SWALE -			1	hole was E-logged 10 January '74.			
	10.0			hame	9,81					
	14.32	1	Light gray, weat noft, fissile, a stained orange a	andy,						
	-		yellow, gumny, n			14 **	ļ			
į	1		interbedded sand seems and lenses	Stone	G:0.1*	11.5				
ļ	1	\$		•						
1	-	1				Noz 2				
	3	7	19.6' - 25.2' mu		13.61					
	1	5	interbedded lens and seems of lig	06 ht						
	_		gray. Time to se	4.		15.31				
	1	1	grained, non-cal sandstone. Some thin-bodded and	are	L.O.31					
	3	(soft to mod, har erossbedded, sta	d,		Box				
	4	J				Dox 3				
	3	-(17.8'					
	=	-			G:0.4*					
		5				10 4				
	20.0				19,81	19.61				
	20.04									
	=				L:0.4'	Box 4				
	3									
	3	***	25.2' - 26.3' ma							
ı	=	• • • •	tight, stained,	sendy		23.2*				
	=	¥	fill.	- 1	23,61					
,	1	_				Box 5	h - 41			
ł	3	1				,	The natorial in the			
	=		26.3' No longer		L:0.5		The naterial in the res from 25.8' - 27.8' was gone over twice and			
- 1	=		weathered.			26,7	the sample is probably disturbed.			
	-									
	3				27.61					
	=		28.8' - 39.6' so			lox 6				
	=	::::	hard sandstone s selenite fills high and low ang	both			The top of the naterial in the run from 27.8' 31.8' was broken by the			
	30,0		high and low ang fractures.	10			31.6' was broken by the			
	1	• • • •				80 -				
	3					31.01				
	=				31.81					
	3					lox				
	3					7				
					0:0.1					
	1									
	3					35.11				
	1				≫.8°					
	1									
	-					lox				
					G;0,2*					
	1									
	79.65 40.01	>			40.01	39.6				
-	1836		LOITIONS ARE DESCRIPTE.		PROJECT	1.ake	- Habankaont BA60-29			

	LINE LO	6	2000	IMPTALLA		FED.	Shake Ma. 60C-30
MAJEST			niseri			E OF SIT	William Frank Lines.
Mot. I. mid	AGENCY			The Real	434-	4500	OHRYTEN OF BRIEF
	14.			19. TOTAL	. 1	BTAR	1
- But	ta : 07 mb.			M. BATE	710H 0	nouse to	1784 1784 1786 166-2-16780
	E OF OVE			17. ELEVA	TION T		300. 176 14 Jan. 174
EPTH M	HLLED H	TO HOCK	31_0' 41_8'	0. TOTAL	01	7	Made
EVATION	96PTH	LEGENG	CLASSFICATION OF INTERNAL	4 7		THE CL	
35.7'	0.6				•	8,00	
	7		070, # 276,‡				1. 10" FLight Augur 0.01 = 2,6" 10,6" = 12,5"
	月		0.0' - 2.6' Bank				6" Busine Burrel 2,6' - 19,6'
	1		med. stiff, to sti moist, sli, send	LEE,		2,61	6" Core Burrel 12.5' - 41.8'
	=		high planticity, 2,6' - 5,6's how			ID-1	8" Catting not to
	Ē		stiff, moist, all silty, all, sand; bish plasticity.	w.	-	4.6"	12.0'
i	크		high plasticity, youkets of dark ; herem, seat, node of caliche.	Las.			2. Janu: A: 0.0' 2.6'
	큭		of caliche. 5.6'± - 7.6'± Tes	n.,		100-2	De 4.6'
	ավավավակա		w/pockets of gray brown, hard, nois all. brittle, his	,	c	6,61	R: 10.6'
	=		mil. brittle, his planticity, calc. scat. modules of caliche.			10-5	5. After drilling the hole was balled to
İ	目		7.61 ± - 9.61 ± 7m	.	-	8,61	hale wer balled to 30,4", 40,0" of sletted
	=		many atter to have				plastic pipe were set after balling.
	10.00		sli, sendy, silty moist, high plant calc., few mears: send size chert, mobules of calieb	ticity,		200-4	After 24 hours the stater level me 16.5
15.11	10.6		mobiles of ealist 1.5ma.	to to	D	10.61	4. A fichtail hole was
	1	J					Aud 33 in 18-16 Ton 1
5.2	12.5	•	9.6' ± to 10.4'		2,5	12,5	1974. The fishfull hole was E-legged on 16 Jan. *74.
				net.	0.3		· · · · · · · · · · · · · · · · · · ·
	-		isone, coarse to grained, gravelly sli. clayer, dark low planticity, a	ten		Вx	
11.01	14.72		cale, water hear	ing 1	4.81	1	
	1		10.6' to 12.5'				
	1		MALE -			16.6"	
	1		Light gray, soft, weathered, gamy, non-calc., seat. of sandstone.	1	40.9		
	1	4	of sundstone.			Box 2	
	-			L	9,21	1	
	20.00	1			0,0		
			12.5' to 12.9'	1	0.0	21.11	
	1	Ţ	LIMBORGE -			21.1	
	1		Gray, hard, fine grained, orystall	ine.		_	
2,21	25.5		12.9' to 14.7'			3	
	3:		BARDOPOUR -	2	5,81		
	3	***	Ten, stained, are bodded, mod. hard				
	=		hard, beging is about 10 to the	bere	0.11	D.2	
	1	111	14.7' to 25.5'	"		Dx	
.6.	7.1		STALE -			4	
	4		light gray, weath stained yellow al- tight fractures a	ered 2	7.81		
	1				. ,		
-	».o		for 30 open free	ions tures.		29.6*	
	1		25.2' - 25.5 was 1 out of core box.	broken eft			
	1					Box 5	
	-		25.5' to 27.1'	3	1.81	.	
	1		Many Abday baddad				
	1		sli, fissile, ero bedded, such inte- bedded shale that gypsiferous and h	- Gat	0.11	33.7	
	1		pedded shale that gypsiferous and h ironstone concret:	ione			
	1		mon-cale.			Bax 6	
	1		27.1' to 41.0'	,	5.81		
	1			10n-			
	1		Dark gray, soft, s calc,, ali, find; many some of ver, soft gray, non-cal	ie,		72.01	
	1		soft gray, mon-cal	lo L:			
	1					Dex 7	4
-	9.4			1	.01	+	
4.7' 4	1				- 1	11.0	
5.9° 4	رود	\leq	T. D	41	-0:		
	-	- 1				- 1	

	10. 2404 11. 3417	AND TYPE	PE OF SAY	or 5 meers	
	10. IAIG	OF ACTUR		AND PERC	1
	10. 191	1) in 2, 7, 2	1500 LB Tim	3 4	1
	14. TOT	AL HUMB	mound to	ATTEN	1
**** YEST.	15. ELE	WATION T	11	10. 'N 14 Jan. 174	1
	1 TOT	AL DOME	nacevan malyac	Y P40 000000 1	1
-		1	100	Matter .	1
9.612		•	4	1. 10" Flight inger 0.0" = 2.6" 10.6" = 12.5"	
t.6' Engle	tare		2.61	6" Duniona Borrol 2,6" - 19,6"	E
eticity,	eale.		103-1	6" Gare herrel 12,5" - 41,8" 8" Cooling not to 12,8"	Ē
mist, sli uli, sendy sticity, of dark a		•	4.61	2. Janu:	Ē
2.514.00	.		19-2	Az 0.01 2.61 Bz 4.64 Gz 6.61 Bz 8.67 Ez 10.61	E
s of gray ard, mais tule, his ty, calc, dales of	r t	6	6,61	N: 8_6* E: 10_6*	E
			133-7	5. After drilling the hale wer balled to Wh.4!	E
9.6'# Ten ff to har dy, silty igh plant er mares a thort, of calich	d,	-	8,61	5. After drilling the hale was bailed to 30.4'. 49.0' of elected plants sipe were set after bailing.	E
or mares	soat	Þ	10_6*	After 26 hours the under level ups 16,9	E
	-			4. A fishtell hele was drilled 15-16 Jan. *	E
10.61		12,51	12.51	4. A fishtall hele was drilled 15-16 Jan. * 1974. The fishball hele was 3-lagged on 16 Jan. *76.	E
grevelly	ned.	L.0.3			E
rey, dark ticity, z ster bear	ing	14.8	Dox 1		
12.51					
w. soft,		L10.9	16.6'		щ
i, gunny, ,, seat, tone.			Box 2		шш
		19,2"			Шш
12.9'	}	20.0			Ē
			21.14		
ri, fine arystall	ine.		Back 5		ш
14.7*		25,81	,		THE I
ined, eres	-				
to the	boro	L10.1'	25,2*		Thu.
25.5*			Dox 4		
tv. weath		27.81	•		
ty, weather alcourage and transport and tran	246				
pen frac	ions.		29.6*		
it was le	aroke.	•			=
27.11		31.81	5		=
•					=
meh inter sale that sa and he concrete	10	10.1	33.7		
concreti	lone		Box		
41.0	-	35.81	•		-
, soft, a	ion-				-
s of very	. 1	41.41	30.01		=
			Dx 7		-
	1	40.00	7		
	0	1.21	41.0		
	1	41-01			-
	1				:

POIL	LINE LOC	STATE OF THE PARTY	MINTALL	ATIBE	750	Main H	SHEET 1	
PRANCET			W. HER	400 TYP		8" SUPER	or1 succi	-
LECAYIN	Committees of	Aprilla Dam	1				-	_
Shirt and	Addition	Dutlet Works	OF SPAN	W ACTURE	DFT 665	Fet ling	1500	-
****	(As shown on a	Corps of Engineers	12. 707	17.3	NV.	mérunage 10		,
AME OF		84-32	-				0	-
	1	Schoonover		ATTOE OF	-	TER	***	_
		-00 100. FROM YOUT.	N. BATE	E MOLE		2 Sept. 74	13 Sept. 7	
	# 07 07ER000	een 34,21			or or 110	E 502.6	.,	_
	MLL00 MT0 M	1.8°	10. TOTA	ATURE OF	AND EC	Y FOR BORNE		3
TOTAL O		36.01		-6	Cole.	EH. DI	رمنت	_
EVATION	DEPTH LEGS		W.6	~	PON OF	Constitute about the	AARKS mater from, depth of - to, if edgestlooms	
•		1	_	•				_
	1 3	0.0' to 12.3'			A			
	ΙĦ	<u> </u>			В		wel 20.1'	
	E	0.0' to 3.5' Medium planticity,			В	15 Sapt.	74 taken be	1
	1 3	brown, slightly sil	ty, so	at.				-
	=	Decrees medium t	o bd		C		takes oblite:	
	I 🖪	plasticity, stiff from 1.8' to 5.5	, bla	ak:		Hole dril	for second	
	1 =	3.51 to 12.31	-			MANUEL TOO	marked on edition	•
	3	Medium to hi miasti	atty,		D	ereek on	line with	
	10.0	very stiff, dry to moist, dark brown,	alight	3				
	-	white onloareous la	sinati	ms,		3. JARS:		
	ınlııı	Recomes lo to me	dies		E	A. 0.0' 1	to 1.8*	
	3	plasticity, silt small off white pockets from 7.0	7. 114	3		B. 1.81 4	to 3 51	
	=	pockets from 7.0	to 1	0.01.		C. 3.5' 1	to 10.0°	
	3	Becomes stickily	gendy.		F	E. 10.0' F. 12.3' G. 16.7'	to 12.3	
	1 1	slightly moist, brown from 10,0°	yellow		•	G. 16.7	to 16.7'	
	=	12631 ' to 1/1617'	~ '1	, .		E. 21.7"	to 26.2'	
	=		- 1			I. 26.2' J. 29.2'	to 29.2'	
	20.0	Medium compact, yel	-					1
	20.0	slightly alayey, no grained, desp.	astb	,	G	4. All overt	surden celou	
	=	grained, demp.				S Bowles on	wing slightl	J
	E	16.7º to 29.2º	- 1				ox. 20.0'.	1
	=	GAY -						
i	E	Le to medium planti, stiff, point, brown	CL TY,	.	н	6. 34.0° 4° mes 13 Se	plastic pipe	•
	=	Becomes lo plasti	otty.		'''		,	
	3	yellow brown, ali	antir i					1
	3	emily, w/sonttore enloareous nodule	from					
	E	21.7' to 29.2'			I			
	=	29.2' to 35.9'			1			
	70.0E	Probably interbedde			J			
	E	lenticular beds of	poist	Ì	J			
- 1	3	to saturated sand, and gravel, reddich	olay.					ı
	3	Note: No samples obta-						
	=	auger from 31.2	to 3	.01.				Į
	1	33.9' to 34.2'			· -			ı
		CONCLOURATE?-	L					ı
	3	Hard, partially occ	en tod			(by di	rill action)	J
	=	(By drill action),			-	Auger ref	ors) to 36.0	1
	E	34.2' to 36.0'			l		-36.01	- }
	1836 PMEV	EMALK	- 1	_ 1				1

	ING LC	×c °	IVISION	5	WD CW		MESTAL		PWD			
PROJECT		4	433					TO BATCH YOU ELEVATION SHOWN THE				
COCNYIGH	Course		illa l									
Ditti, Lind	AGENCY	_				-	SE HAM	ACYURI	R-8 045	Pailing		
. HOLE HO	(Ac otro	Com	ps of	Engin	eors		12 TOT	M HO DE	OVER-	EM 6		
DAME OF	-				84-33			4. myset		1		
. benection		Sob	00007	r				ATION OF	NOUND W	ATER		
(3) VERTIC					988. FR9	. YERT.	IL DAT	E MOLE	1	2 Sept. 74		
. THERRES				9	.51			ATION TO	P OF HO	LE S		
. 96РТН 28			K		.5"		15. DER	ATURE OF	MEPEC	Y FOR BORING		
. TOTAL DE	_				۰0۰			Medi	+4	Dine		
ELEVATION 0	DEPTH	LEGENO	Ĺ	LABOPE	ATION OF 1	AVERIA	4	CONT.	SAMPL E	(Brilling these,		
	Ξ		0.00	to	8,51							
	_=		CAT.						Α	1. Haking		
1	=			0' to	2.31		•			Water le		
	_3		Me	dium ;	plastáci	ty, s	oft,		В	check. Sept. 74		
	=		-	rist, :	lark bro	rest, si	lightl	7	D	Seps. 74		
	=			ity.					_	2. JARS:		
	7		2.	5° to	5.4° medium y	last.	mi tv.		С	A. 0.0'		
	3		81	HIII. 1	moist. v	rellow	brown		0	B. 2.3		
	7		s)	ightl	sandy, hite cal	soat	tered		_	D D. 8.2		
502.69	7		n)	es.	11 ce cer	OSTO	ne nod		E	B. 8.5		
502.1	10.0	D 40-17		Beo	mes nor	-	y.			F. 9.5		
	=	-		(82	y, fine	grei	.ed),					
- 1	_									5. All over		
	3		(2	4º to	line sar	nd). p	robabl	y				
	_=		11	terbe	line sar	y & .	and,			4. Boring o		
	Ξ		L	w plan	rticity,	stift	t, mos	st,		5. Set 9.5		
	_=		91	OWN TO	ten, s	catte	Leg Ex	evel,		pipe 12		
1	=			Bea	mes lo	to see	iium					
- 1	3			pla	rticity, relly (r staff	brow	n & gr					
1	=			Age;	staff.	from	3.2°	8.51				
1	=									ŀ		
	Ξ		0.5° GRAVI	to	9.5"							
	=											
	7		(2	order.	Line san	d), a	diw					
	3		ان ان	ayey.	wet to	satur	ated.					
j	-		84	atter	ed coppy	88.						
1	∃						1					
1	-1		FFILM	ry			1	-				
	=	•	9.51		10.01							
	-		SHALL									
	=			loft,	ediwa g	ray,	lamina	ted,				
	=			ertie	careous	on pu	om.	light				
	3		ĺÍ	e sta	ln,							
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1	_=			1	D. 10.0)•						
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		PREVIOL	L									

NOTE:

FOR LOG OF BORING NO. 3F-31 SEE PLATE IX-34

		1	
IVIN DA NO	ACTION	DAYE	DESCRIPTION OF
-		Y EN	GINEER DISTRICT, FO
DEBIENED BY:	1		AQUILLA LAKI
			AQUILLA CREEK, TEX
DRAWN SY:	1		EMBANKMENT AND S
			EMBANNMENT AND 3
CHECKED BY:	1		LOGS OF BORIN
	-	8	A6C-29, 6DC-30, 8A-32
			INV. NO. DACH65-80-
			CONTR. NO. PACLIGE
ENGINEER:			ORAWING NUMBER

HANGFACTURES'S DEBERNATION OF DRILL
PASSING 1500
TOTAL NO. OF OVERSURGEN SAMPLES TAKEN 6 6 4. TOTAL MUMBER CORE BOXES IN DATE HOLE STANTED 12 Sept. 74 12 Sept. 74
17. ELEVATION TOP OF HOLE 512.1 BARATICAL DINCLIMED THICKNESS OF OVERBURDEN DEPTH DRILLED INTO ROCK YOTAL BEPTH OF HOLE 9.51 512.11 10.00 CLASSIFICATION OF MATERIALS A В A. 0.0' to 2.3'
B. 2.3' to 5.4'
D. 8.2' to 8.5'
E. 8.5' to 9.5'
F. 9.5' to 10.0' С Becomes more sandy (gray, fine grained), from 4.0°. 5.4' to 8.5' (Borderline sand), probab interbedded clay & sand, . All overb 4. Boring caving from 5 Los plasticity, stiff, not brown to ten, scattered gr 5. Set 9.5' 4" plastic pipe 12 Sept. 74. Low parties to tan, Scattering and sandy.

Becomes to to sedium plasticity, brown & gray gravelly (lenticular) vary staff from 8,2' to 8,5' 8.5' to 9.5' (Borderline sand), medium compact, yellow brown, clayey, wet to saturated, scattered cobbles, --- -T.D. 10.0' ---SUS EDITIONS ARE OBSOLETE HOLE 403

RECORD DRAWING-WORK AS BUILT

YN I DO HO A	CTION .	DATE	DESCRIPTION OF	REVISION	
u.s.	ARM	COR	NEER DISTRICT, F PS OF ENGINEERS ORT WORTH, TEXAS	ORT WORTH	4
DESIGNED BY:			AQUILLA LAK		
DRAWN ST:		ЕМ	BANKMENT AND S	PILLWAY	
CHECKED BY:		846	LOGS OF BORIL		
SUBMITTED BY:			INV. NO. DACH65-80-	8-0085 DATED : A	UG. 1980
			CONTR. NO. DACHGE	-81-C-0055	SEQUENC
EMBINEER:			DRAWING NUMBER	B-15 OF	120

COMPANY FINAL FOUNDATION REPORT

(1)

DAIL ING LOG	Conthuentern	METALL THOSE	Port	Borth or 3 seers		
Aquille	Dan Site	-		H HUMBY BE COTE		
Outlet	Norks	Above Til. II MANUFACTURENT DESIGNATION OF DAILL FAILING 1500				
COPPE CA E +O (As about on the	8A60-34	15. TOTAL NO. O	LES TAK	EN B O		
AME OF DELLER	noonover	16. TOTAL HUMB 16. ELEVATION O	mound 1	ATER DO		
DABUATON: DIMERMO	0 046. PROE VERT.	N. BATE HOLE	5	Sept 74 12 Sept 74		
HICKHELL OF OVERBURD EPTH DRILLED HETO HOC	EH 19.51 H 49.51	M. TOTAL CORE	RECOVER	ty ron somme DZ 1		
DTAL OF PTH OF HOLE	69.0*	M. TOTAL COME	7	Lawer D. Lagar		
VATION DEPTH LESEM	CLASSIFICATION OF MATERI.	RECOV.	POI OF	(Brilling Sans, make how death of		
3	0.0° to 5.5°		A	1. Hole making water		
	CLAT		-	from 18.0' to 19.5'. Water level 16 Sept.		
3	low plasticity, med	S vote	8	74, after heavy rains at 17.2'		
=	dark brown, vary fi	inely		2. Drilling: No prob-		
: =	calcareous.		C	2. Drilling: No prob- lens. Fost core loss due to pechanical		
= =	2.0' to 5.5' - low ; ticity, medium to a brown, very finely	oft,	-	grinding after en- countering small len-		
10.0	to silty, moist cal	sendy loarsous.	D	ticular very fine grained hard sand- stones.		
- 3	5.5' to 18.7'			3. Jars:		
=	SAND		2	B. 2.0' to 2.0'		
4	5.5' to 7.5' - fine medium to operse so	en imad .		D. 7.5' to 10.0'		
=	and clayer with col nochles up to 2/8	silty	P	F. 14.6' to 14.6'		
Tall I	nodules up to 5 /8" cohesive, calcarect	, non		G. 16.5' to 18.7' R. 18.7' to 19.5' I, 19.5' to 21.0'		
=	7.5' to 10.0' - very	fine	G	4. Core Boxes;		
20.0	grained to silty, a clayey in places, rart brown, cohesis	tan to	H	1. 21.0! to 24.7!		
	exap.		ļ.	2. 24.7' to 29.8' 3. 29.8' to 34.0'		
	10.0' to 14.6' - ver	of fine	Box 1	5. 38.8' to 43.0' 6. 43.0' to 46.5'		
	grained, silty and ly clayer, light re colored, poorly col damp, calcareous.	set L 1.1	1	7. 46.51 to 50.71		
	-			8. 50.7' to 54.9' 9. 54.9' to 59.6' 10. 59.6' to 64.4'		
	14.6' to 16.5' - most grained, some oleye binder, dark brown	7	Box 2	10. 59.6' to 64.4' 11. 64.4' to 67.8'		
	binder, dark brown non cohesive, wet, calcareous.	1. L 1.6		5. Sample Treatment:		
30.0	16.51 to 18.71 - we	ry fine -		Core was hastily log- ged and immediately		
	grained, clayey, to light brown, modern cohesive, wet, cale	an to	Box	wrapped in foil, seal		
	cohecive, wet, cale	L O.	3	erapped in polysthyl- ene and covered with wax to preserve samp-		
	18.7' to 19.5'		-	les for testing.		
	CRAVEL - poorly grad	lod,	Box	*6. Location of Hole: Texas State Plane		
	CRAVEL - poorly gra- maximum to, ten to brown clayey binder	net. L 1.	4	Coordinator: Corled X = 2,092,505 Y = 33.770		
	19.5' to 21.0'	rosth-		I - 83,730		
40.0°	SHALE - dark gray, orod, mort, non-cal	enreous.	-]		
	21.0' to 59.0' ***	£ 0.0	Box 5	To Top of shale at 19.5		
	SHALE - gray to dark ; soft to sedius hard,	220-	_	Began coring at 21.0		
	quent laminar defini	tion LO.9	Box 6	Ore was not logged in detail (see re- marks No. 5);		
	dations into fine gr	sined.		Description is		
	gray, soft sandstone with no observed this	olmace I	Зох	ADTS:		
	in excess of 0.5% ft lenses of grayish-to fine grained, well o	a very	7	A 4" WIDE STRIP OF PARAFFIN-SEALED CORE		
50.0	ed sendstones, when countered, these lan	ED- L 0,2		BETWEEN SO.7 AND		
70.00	often broke and came core loss due to gri	ed eding.	Best	THE SWO LOS ON		
	SHALE: UNWED.	007- LO.6	-	7 FEA., 1975.		
	50.2 1 0.02 to 0.00	37.				
	#1.0 0.03' silly som	Seem .	Box 9			
慧	KLE 10 fract	L 0.6				
60.00	52.1 300) frad					
- 25			les .			
	36.30) 0.05 sandy 30200 sections survey 46.36.5 harmen Andress buty 56.9 to 58.7	Sift 1 0.4	10 x	- WOODBINE / DEL		
	hardness butv.	rry		RIO MORMATIONAL CONTACT IS AT 62.5		
	36.9 70 58.7' SHALE : 3-FT, no	7.	Box			
	SIME: 3087 no cake Silve of Si	E 1. 0.8	44			
	Stone Zone of	25				
3	57.4-52 sandy ail	tatma	1			
ակափու	Jaminations & a.	Hic				
킠	fm hardness be	Tours				
<u> </u>	SB. Tre 57.5	t lev				
ևուկուվա	SHALE sandy (fin	·				
=	SHALE: sandy (fill sith the sandy of the sandy of the sand sandy of the sandy of th	ned.				
آ ا	calc. at st. st.					
L -J						

	_	59.5' to 61.2'		-
		SHALE & SANDSTON	-	F
		Finely interbooked, Stall he way tamby to iff to all the way to iff to a stall the interbook to be to be to a stall the way to be to a stall the way to be to a stall the way to be to a stall the way to be to a stall the way to be to a stall the way to be to a stall the way to be to be to a stall the way to be t	7	E
		he wing sandy & silfy &		E
		alighty offer Sandliane	1 1	F
	1 1	sitty partings in both	1 1 1	F
	1 3	materials. Interval Le	1 1	F
	I -3	59.5-59.6 Sandature		F
	1 3	V. cale / Limestone, V.		=
	3		1 1 1	=
	1 7	642 to 62.4	1 1 1	=
	1 3	SANDSTONE : silly	1.	F
	1 -3	very cat, slightly,	1 1 1	F
	1 3	Trible, mod hard, ga	M I	F
	1 3	SANDSTONE: silly, yery cat., slightly, frishe, mod hard, ga consists at abundant se strants with shaly		F
	1 =			F
	1 3	Somewhat cake.	1 1 1	F
		Somewhat cake.		E
		LIMESTONE: SARdy		E
	_=	Shaly Contains had		F
	=	Amintum.		E
		62.5 10.62.6		E
		LIMESTONE: argill	-	E
	1	Becours, mod hard to		E
		LIMESTONE: argill Beaus, mad hard to hear heard, Top 0.05' is rust stained.		E
	=	62.6' to 64.4'		E
			1 1 1	E
- 1	1 7	med hard to seft, gray	<i>x</i>	<u> </u>
	7	to dack acres		E
	1 -3	to dark gray. 62.6-62.9 Camtair thin limestone loss	4	E
	1 3	thin limestone keep	1	=
	.3	drilled up. Apparen	4	F
	3	drilled up.	1 1 1	=
	I 3	634-63,7 soft. contains liney partin 13.7-644(4) very in	1 1 1	F
	-3	13.7-64.4'6) Very 2	1	_
	3	mad hard, banderh	F	E
ı		limestone.		E
		,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		E
- 1	=			E
i	-	T.O. @ 69.0'		E
- 1	andandandan hadaalaalaalaalaalaalaalaalaalaalaalaalaa	1.0.0 67.0		
]				<u></u>
	3			ļ.
- 1	F		1	=
1	$-\Xi$	1		F-
	hulun		1 1 1	E
	-3			F .
	3			F
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PORM	1836 PMC	HOUS ENTHERS ARE GROOLETE.	Aquilla Da	M 8A6C-34

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DOCK I	ING LO	E T	PARSON.	BIRTAL.	LAYION		Hole No. 0.460-35			
HEJSEY			Southwestern	10. 0021	AND TYP	ort Wo	O" Anone 6" Corn			
Aquilla Bass Curios F					532.4" Above ISI.					
Corps of Engineers					Pailing 1500					
AND WALLES					AL HUMBS					
					WATION &	AQUILD TO	ATER 05			
(C) ventue					E HOLE	17	July 1974 22 July 1974			
THICKNESS DEPTH OR	6 0F 0V	TO NOC		17. ELEVATION FOR OF HOLE \$32_41 10. TOTAL CORE RECOVERY FOR BORISS 90 1						
-			75.00	2. 100	ATURE OF	MPEC	Chance & Lagen			
EVATION	300 TH	LEGEN	CLASSIFICATION OF MATERIA		州能	200	Charles and the same of			
•		-	0.0' to 9.5'		•	·				
	=		CTAY			A	1. Water level at 24.7 after auguring to 20.0'. Unter level			
	=				L.	-	Was measured at 24.70			
1	-3		0.0' to 3.5' - high p black, stiff, slight slightly sandy.	ly no	-t.	-	48 hours after hole completion.			
	3		andred and.							
	=		3.5' to 9.5' - border slayer send.	1100			to 30.0°. Cleaned			
	=		9.5' to 26.0'			D	ed 2 foot core run			
	10,01		SAND - medium dense, m	dim	10	-	Difficulty with mount			
1			SAND - medium dense, m fine grained, moist, trace ten clay.	ten,			in hole. He returns, Core badly broken and			
	medimilian		26.0' to 29.0'			E	coverable core run			
	111			tal.			from 33.0" to 34.0".			
	-		GRAVEL - 1" max, satur dense, clayey, sundy.				5. Jare: A. 0.0' to 3.0'			
H	3		29.0° to 30.0°				B. 5.0° to 3.5° C. 3.5° to 7.5° D. 7.5° to 9.5°			
	=		SHALE - non-calcareous				D. 7.5' to 9.5'			
1			weathered, dark gray				F. 14.50 to 10.51			
	20,04		30.0° to 64.8° ***				B. 23.0' to 26.0'			
	T.		soft to medium bard,	rey,			I. 26.0' to 29.0' J. 29.0' to 30.0'			
	mlmi		quent laminar definit	lon			4. Core Boxes:			
	=		partings; occasional ; dations into fine grai	70-						
	4		gray, soft sendstones with no observed thick			18	3. 43.0' to 47.4'			
	Ξ		in excess of 0.5°; fre loness of graylab-tan	iques!			5. 52.0' to 56.4' 6. 56.4' to 60.5'			
	1		lonses of graylsh-tan fine grained, well our ed numbertones. Then	very			7. 60.5' to 64.5' 0. 64.5' to 68.7' 9. 68.7' to 72.9'			
	3		COUNTERED, There level	-		I	9. 66.7' to 72.9' 10. 72.9' to 73.9'			
	. =	=	often broke and sensed ours loss the to grind	ine.		_	10. 12.9' 10 75.9'			
1	20.00	臺	Shale became very mal- careous at 64,6".			J	5. Sample Treatment:			
Ì	=	=	ORTHORS ES OF, D',		No Re	DITE.	Core was cursorily examined and immediate			
	ョ	曇					ly wrapped in foil, socied with wax, then wrapped in polyethyl-			
	크	畫			L 0.7		ene and covered atry			
	=				L 0.2	Nox 1	wax to preserve samp- les for testing.			
	4	\equiv					•			
	3	\equiv			0 0.1		Texas State Plane			
	= =	畫				Box 2	Coordinates: Coaled X = 2,092,295			
ľ	10.0	\equiv				•	Y - 85,350			
- 1	=	▆			L 0.5		7. Top of shale at 29.0			
	3	2			10.00		Began coring at			
- 1	4	=				Box	31.0' (See Remarks			
	3	=	(Auto	1)~	L 0.2	3	net logged in detail			
	3						(See Remarks No. 5); Description is general,			
- 1	E	=			E 0.4					
- 1	=					Box	8. Core was examined at SWD Laboratory			
- 1	90.00	季				4	in preparation for			
- 1	=	\equiv					"50.0" WAS TOUGH TO			
- 1	크				L 0.1	Box				
	4	=				5	approximately 45° to recovery. Shale			
	=	=					to recovery. Shalls dark gray, soft, even textured, with meteral parting intersecting one allohenside (core did not part entire), along projected elichenside).			
	3	\equiv			€ 0.3		intersecting one			
	3	莹				D-	did not part entirel			
		重				6	along projected slickenside).			
1	60.07	3								
	3	\equiv			L 0.3*					
1	4	=				Total T				
	4	7		ĺ						
	=	=	64.8" to 75.9"		6 0.5*					
	4	卓	Core intermittently g	101(U)		Box				
	3	7				8				
	3	\equiv	lisy shale, nesten has hard, gray to grayish slightly to very sales	ten,	L 0.81					
1	70.0	Z			•	Box				
	3	-	Top of Bel Rio formats at 64.8" (picked from measured core recovery	ion		9				
	3		measured core recover; and electric logs).	,	L 0.31					
	3					Desc 10	/			
	=									
	弖									
	=		T. B. 75.0'				4			
	_									
	ાં					-1				



Acuilla I	Southwatern	M. MIE MED YY	Port De	or? SMEETS	
Affinition of the control of the con		BUSI CON CONTROL I			
		9 0			
Brown:		M. BLEVATION	MOUND U	ATER 00	
THE ALL OMELINES ORG. PRINT VERY. 17 JULY 1974 22 JULY 1974 22 JULY 1974 22 JULY 1974 22 JULY 1974 23 JULY 1974 23 JULY 1974 24 JULY 1974 25 JULY 1974 27 JULY 197		532.41			
PTH OF HOLE	15.00	16. SHOMATURE	P IMPEC	Chance & Lague	
6 4	CLAMORICATION OF MATON	1	2000	Charles and the latest of the	
=	0.0' to 9.5'			after sugaring to	
3	0.0' to 3.5' - high black, stiff, sligh	plasticity,	3	26.0', Dater level was measured at 24.7' 48 hours after hole	
1	slightly musty.		c	completion.	
Tim.	elayey send.			to 30.0'. Cleaned out to 31.0'. Attempt ed 2 foot core run	
o grand	9.5' to 26.0'		Þ	Difficulty with gravel	
THE STATE OF	fine grained, mois- trace ten play.			in hole. So returns, Core badly broken and ground, First re-	
1	25.0' to 29.0' GRAVES, - 1" max, mate	rated.		from 53.0° to 54.0°.	
뒴	dense, clayer, sent	b.		3. Jare: A. 0.0' to 3.0' B. 3.0' to 3.5'	E.
ılır.	SHALE - non-nalearess	us,	,	B. 3.0° to 3.5° C. 3.5° to 7.5° B. 7.5° to 9.5°	
7	30.0° to 64.8°			E. 9.5' to 14.5' F. 14.5' to 19.5' G. 19.5' to 23.0'	
50.0	SHALE - gray to dark soft to medium hard.	fre-		II. 25.0' to 26.0' II. 26.0' to 29.0' J. 29.0' to 30.0'	
킠	and occasional natur	tion ml		4. Core Boxes; 1. 35.0' to 37.2'	
=	dations into fine gray, soft sandstone with no observed thi	ained,	ĸ	2. 37.2° to 43.0° 3. 43.0° to 47.4° 4. 47.4° to 52.0°	
ուրակարևում§ուրակարևակար§ուրարարարու	in excess of 0.5% in lonses of grayish-te	requent n very		5. 52.0' to 56.4' 6. 56.4' to 60.5' 7. 60.5' to 64.5'	=- C E-
4	fine grained, well of ed sandstones. There countered, these less		1	7. 60.5' to 64.5' 0. 64.5' to 68.7' 9. 68.7' to 72.9' 10. 72.9' to 73.9'	
	often broke and ease core loss due to gri Shale became very se	nding.	3		
臺	pareous at 64.8'.		PETRA	Core was cursorily examined and immediate- ly wrapped in full,	
臺		L 0.		senied with wax, then wrapped in polyethyl- ene and movered with	
墨		L 0.:	Box	wax to preserve samp- les for testing.	
書		å o.		6. Location of Hole: Texas State Plans	
			gox.	Coordinator: Coaled X = 2,092,295 Y = 85,350	
		L 0.		7. Top of shale at 29.0	
霍		10.00	-	segment to 30.0". Began coring at 31.0" (See Remarks	
臺	(and	mal) - L 0.1	Box	No. 2). Core was not logged in detail	
				(See Remarks No. 5); Description is general.	
畫		1 0.4	Box	6. Core was examined at SWD Laboratory	<u>.</u>
0.0			1	in preparation for selective testing, Interval 56,4° to	
畫		E 0.1	Box	56,6' was found to	
			5	approximately 45° to recovery. Shale tark gray, soft, even textured, with	
-		€ 0.3	<u> </u>	materal parting intersecting one	- - -
揰			But	alichenside (core did not part entirel; along projected alichenside),	
••				silekunside).	
書		1 0.3	Box		
臺			7		RECORD DRAWING-WORK AS BUILT TYRING NO. ACTION DATE DESCRIPTION OF REVISION U.S. ARMY ENGINEER DISTRICT, FORT WORTH CORPS OF ENGINEERS FORT WORTH, TEXAS
擅	64.8" to 73.9"	0 0.5	Boz		
蓮	from shaly limeston limy shale, maiting	grades to	8		RECORD DRAWING-WORK AS BUILT
·	hard, gray to gray! slightly to very on	dersons.			
15	Top of Del Rio form at 64.8' (plaked fr measured core recov	-	Box 9		TYRIDA NO. ACTION DATE DESCRIPTION OF REVISION
害	and electric logs).	L 0.5	Best 10		U.S. ARMY ENGINEER DISTRICT, FORT WORTH
1					CORPS OF ENGINEERS PORT WORTH, TEXAS
luulu	T. B. 75.01 -				AQUILLA LAKE
Tan I					AQUILLA CREEK, TEXAS
\$36 PREVIOU	US ESITIONS AND GOOGLETS.	PAGE	Aquill	A Date 8460-35	EMBANKMENT AND SPILLWAY
					LOGS OF BORINGS
					BAGC-34 AND 35
					INV.NO,DACH63-80-8-0085 DATED: AUG. 196 CONTR. NO. DACHGS-81-C;0035 SEQUE

DRILL	ING LO	ic	forthwestern	MISTALL		Po	rt Worth or 2 seers
LOCATION	Agi	ailla	Deam .	11. BAY	DE FOR E	EVATION	B" Augers b" Core
Dutle	AGENCY	2	· · · · · · · · · · · · · · · · · · ·			A'S DES	GRATION OF MILL
Corps House Ho	of the	ineer:	s ucio	13. TOT	iling	OVER	th 12 www.stunsep
HANE OF		-	8460-36	14. 707	AL HUMBE	A CORE I	NOVES 11
DIRECTIO				M. DAT	VATION 64		6 July 1974 30 July 1974
ED VERTI	-	₩C L PH E 11			VATION TO		
DEPTH SE							Y POR BORING 95
TOTAL BE	PTH OF	HOLE	78.0*	L			Theme H. Logar
LEVATION	BEPTH b	LESEND	CLASSIFICATION OF MATERIA (Peorspine)	LS	E CORE	SAMPLE NO.	(Brilling thro, reter lose, doch of reathering, etc., if significant
•	•	·	0.0° to 11.0°		i i	A	*
	=		CLAT			_	1. Water level at 23.5* after completion.
	Ξ		0.0° to 1.6° - medium	to h	eth.	В	2. Drilling: Augered
			plasticity, moist, t	lack,		C	2. Drilling: Augered to 33.0' (Rock-con- tact at 32.0'). Be-
	Ξ					Ů	tact at 32.0°). Be- gan coring at 33.0°.
	=		1.8° ic 4.0° - nedium ticity, moist, scatt	ered			3. Jars: A. 0.0' to 1.8'
	Ξ		calcareous nodules, slightly sandy.	tan,		D	B. 1.8' to 4.0'
	Ξ.		4.0° to 6.3° - as abo	ve			C. 4.0° to 6.3° D. 6.3° to 11.0° E. 11.0° to 16.0°
	10.01		interval; no nodules				P. 16.0' to 20.0'
	=		6.3' to 11.0' - bords clayey sand, moist,	rline			H- 22-01 to 23-01
	=		oalcareous.			×	I. 23.0' to 28.0' J. 28.0' to 29.5'
	=		11.0' to 22.0'				K. 29.5' to 30.5'
	=		SAND - medium to fine	grain	ed,		L. 30.5' to 31.5' H. 31.5' to 32.0'
	=		medium dense, slight moist, tan, clayey,	tly			4. Core Boxes;
	Ξ		careous.			7	1. 33.0' to 37.0' 2. 37.0' to 41.0'
	=		22.0' to 23.0'				3. 41.01 to 45.31
	20.0		GRAVEL - 3/4" maximum.	sub-			5. 50.0° to 53.9°
1	3		rounded, poorly grad medium dense, clayer sandy, tan to red, a			G	6. 53.9° to 58.2° 7. 58.2° to 62.5°
	7		siltatone fragments,	one		H	8. 62.5' to 66.8' 9. 66.8' to 70.1' 10. 70.1' to 75.0'
	3		moist, calcareous.				10. 70.1' to 75.0'
	3		23.0' to 30.5'			x	
	4		SAND - medium dense, s ium to fine grained,	-boa			5. Sample Treatment: Core was curporily examined and immediate
	Ξ		tan, moist, clayey, gravelly from 26.0*	•			ly wrapped in foil,
	目		30.5', calcareous.	to		3	sealed with wax, then wrapned in polyethyl-
	30.0		30.51 to 31.51			K	wax to preserve samp-
	=		GRAVEL - 3/4" maximum	. mib-		L	les for testing.
- 1	-	돺	rounded, poorly grad tun, medium dense, s		'o Re	urns	6. Location of Nole:
	=		clayey, very point,	cal-	L 0.0'		Toxas State Plane Coordinates: Scaled
	=	〓	carcous.			Box	X - 2,092,300
	=		31.5' to 32.0'			1	Y - 85,070
	=	\equiv	SHALE - non-calearcone weathered, poft, day	s, rk	L 0.7'		
	=	\equiv	CLUA.				
	40.0					Box ?	
	Ξ		32.0° to 67.8° ***		r 0.0.		7. Top of shale at 32.0
	=	\equiv	SHALE - gray to dark a	Tay.	L 0.0	Box	Augured to 33.01. Begun coring at 33.0
	=		soft to modium hard, quent laminar definit	ion	_	3	Core was not logged in detail (See re- marks No. 5). De-
	=		and occasional nature partings; occasional	gra-	L 0.6		marks No. 5). De- scription is general.
	=	臺	partings; occasional dations into fine gra gray, soft sandstones	ined,	Actual	,	
	=	三	with no observed this in excess of 0.81; i	reque	nt	Box 4	at 500 Laboratory
	=	\equiv	in excess of 0.81; in leases of grayish-tar fine grained, well on	very	L 0.51	-	in preparation for selective testing.
	50.02	\equiv	ed sandstones. Then	60 -			Interval 59,9' to 60.5' was found to be
	=		often broke and cause			Box	badly broken with slicksmaides noted
	=	=	Shale became very cal	l-		5	on some of the misces. Prominent
ı	=		careous at 67.8'.		L 0.0		alinkemaide noted
	=	\equiv	67.8' to 78.0'			Box	also at 60.5° approx- inately 45° to core. It is possible that
	=		Core intermittently a	crades	<u> </u>	6	the badly broken con- dition of the core
	=		from shalv linestone	to			dition of the core in this short inter- val was due in part
	=	=	liny shale, medium he hard, gray to grayish slightly to very calc	-tan,	C 0.5		to mechanical damare.
	E0.02	\equiv	Man of Del Pie formet		•	Pox 7	Shele dark gray to black, soft.
	E		Top of Del Rio format at 67.8' (picked from measured core recover	TOD			,
	3		and electric logs).	7	L 0.8		
	3						
İ	3					Box	7
ĺ	=	=					
	=	\equiv			G 0.31	_	
	4	=				Box 9	
1	70.0			1			
	H	E			L 0.11		
1	Ξ				J 0. 1'	Ber	
	=	事				Box 10	
	=						
1	3	=			T 0°5.	Box	
	=	王				11	
	=		T. D. 78.0'				
	=						
			E FORTIONS ARE OBSOLETE		PROJECT		In Drum BACC-36

Hole No. 8A60-36 BOKES 6 July 1974 30 July 1974 TOWN THE STATE OF JULY 1972

IN 1972

IN 1970 BORNE 95

TOWN THE MARKE OF TOWN THE STATE OF THE Drilling: Augered to 33.0° (Rock con-tact at 32.0°). Be-gan coring at 33.0°. gan coring at 33,0

3. Jarn;
A. 0.0 to 1.81

B. 1.8 to 4.0' to 6.3'

D. 1.0' to 16.3'

D. 1.0' to 16.3'

D. 1.0' to 16.3'

D. 1.0' to 16.3'

D. 1.0' to 16.3'

D. 1.0' to 16.3'

D. 1.0' to 16.3'

D. 1.0' to 16.3'

D. 1.0' to 16.3'

D. 1.0' to 16.3'

D. 1.0' to 16.3'

D. 1.0' to 20.0'

D. 20.0' to 20.0'

D. 20.0' to 25.0'

D. 20.0' to 29.5'

E. 29.5' to 50.5'

II. 30.5' to 51.5'

III. 31.5' to 52.0' 4. Core Bozes:
1. 33.0' to 37.0'
2. 37.0' to 41.0'
3. 41.0' to 45.3'
4. 45.3' to 50.0'
5. 50.0' to 53.9'
6. 53.9' to 58.2'
7. 58.2' to 62.5'
8. 62.5' to 66.8'
9. 66.8' to 70.1'
10. 70.1' to 75.0'
11. 75.0' to 77.0' 11. Pp.0' to first.

. Sample Treatment:
Core was oursorily
examined and inracilatly wrapped in foil,
sealed with wax, then
wrapped in polyethylene and covered with
wax to preserve complee for testing. 6. Location of Hole:
Texas State Plane
Coordinates: Scaled
X = 2,092,300
Y = 85,070 7. Top of shale at 32.0 augured to 35.0'. Begun coring at 35.0' Ours was not logged in detail (See remarks Ec. 5). Description is general ecription is general
Core was examined
at STD Laboratory
in preparation for
selective testing.
60,57 was found to h
adily broken with
slickmarides moted
on some of the
piscose. Prominent
also at 60,57 approx
in the piscose. Prominent
the badly broken con
dition of the core
in this short interreal was due in part
to sechanical dame;
also at a prox
label dark gray to
black, sort.

BAGC-36

in Dem

DRILLING LOG Port Worth Southwestern Aquilla Dam Site
LOCATION Communication of Austral
Outlet Works Investigation M. MIZE AND TYPE OF MY O" AUTOT Above MSL TE MANUFACTURE I DESIGNATION OF DRILL
PALLING 1500

TA TOTAL BO. OF OVER.

OUNDER SAMPLES TAKEN

O Corps of Engineers THE ELEVATION SHOWED WITER 60

MATE NO.E 27 JULy 1974 25 JULy 74

TE. ELEVATION FOR POP NO.E 253,41

M. TOPA LOOK RECOVERY FOR SOUND

M. BERNITHER OF MERCETOR

LOOK STORY OF SOUND STORY THERTICAL DIMELINES 23.51 TOTAL BEFTH OF HOLE \$0.00 to 1 CATION OF MATERIALS 0.0° to 13.5° oe
1. Probably making mater below 17.0°.
Bole cared to 17.5° upon completion.
Water level at 17.5°
25 July 1974. CLAY - onloareous, medium plasticity, medium, ten moist, sandy 13.57 to 16.81 GRAVEL - celcareous, 2" maximum, moist, sandy, slightly clayey, ten. 2. Drilling: No prob C 3. Jars: 16.8° to 19.0° A. 0.0° to 0.6° to 5.5° C. 5.5° to 6.8° to 7.1° E. 7.1° to 16.0° C. 16.0° C. 16.0° to 16.8° L. 16.8° to 16.9° L. 16.8° to 16.9° L. 15.8° to 25.0° J. 23.5° to 25.0° SAND - fine grained, tam, calcareous, medium dens damp. 2 19.0° to 23.5° CLAY - medium to low plan-ticity, medium, tan, slightly calcareous, possible highly meather-shale. P G 25.5° to 25.0° H SHALE - gray, some laminar definition, unweathered, I 3 --- T. D. 25.0' ---ակամասհավառևանակա HOLE NO BA-37 Aquilla Dam Site

RECORD	DRAWIN	IG-WORK	AS BUILT
	•		
YM DO NO	ACTION	DATE	DESCRIP
u.s	. ARM		GINEER DISTRIC ORPS OF ENGINE FORT WORTH, TEXA
DESIGNED BY:			AQUILLA AQUILLA CREI
DRAWN BY:			EMBANKMENT A
CHECKED BY:			LOGS OF I
SUBMITTED BY		•	INV. NO. DACV
			CONTR. NO.P
ENGINEER:			DRAWING NU

Decided Aguille Dam Site LOCATION Comments of Imment LOCATION Comments of Imment LOCATION Comments of Imment THE PRIVATE PRIVATE STATES AND ADDRESS ADDRESS OF THE PRIVATE STATES AND ADDRESS LOCATION COMMENT LOCATION COMME		LING L	06	MANUAL TO	Southwestern	SECT A	LAVION	Fort W	Noie No	Souter 4
ONLIGH Series Investigation The Later Property States Property of Bull. The Later Property States Property of Bull. The Later Property States Property of Bull. The Later Property States Property of Bull. The Later Property States Property of Bull. The Later Property States Property of Bull. The Later Property of Bull. The Lat	PROJEC		quill.			10. 147				TOP 1 SHEC
THE COMPANY OF THE PROPERTY OF	LOCATIO	HI (Counts	utlat	Harries	Inmestication	1	Above	Mest.		
The control of the co	DRILLIN					13. MA	HUFACTUR	EN S DEL		
THE OF SALLES SHEET OF SHEET	HOLE HO	(de me	n on me	AND MINES		PR. TO	TAL NO. OF	OVER	DISTIMOSO	
IN LEXATION GROUPS DATE: 10	HAME OF	DRILLER	_		84-57					0
Section Sect			Brewe			IR EL	EVATION &	ROUND W	TER 66	
TRECORED OF CHARGE OF THE PROPRIES OF THE PROP				•		H. DA				28 Tule T
TOTAL DEFINIT PRIOR DEFINITION FOR THE PRIOR DEFINITION OF THE PRIOR OF THE PRIOR DEFINITION OF THE PR					3.51	17. EL	WATION T	OF OF HO	LE 522 40	27 5023 12
TAYLOR OF THE CAMERICATION OF MATERIALS 2000 CO. CAMERICATION OF MATERIALS 2000 CO. CAMERICATION OF MATERIALS 2000 CO. CAMERICATION OF MATERIALS 2000 CO. CAMERICATION OF MATERIALS 2000 CO. CAMERICATION OF MATERIALS 2000 CO. CAMERICATION OF MATERIALS 2000 CO. CAMERICATION OF MATERIALS 2000 CO. CAMERICAN CO. CA				я .	1.51	10. TO	AL CORE	RECOVER	Y FOR BORING	11/11
O.07 to 15.57 - GLAT - calcarsous, sedium plasticity, medium, ten moist, sandy slightly olayer, ten. 13.57 to 16.8* GRATEL - calcarsous, 2° maximum, soist, sandy, slightly olayer, ten. 16.8° to 19.0° SAMD - fine grained, ten, calcarsous, grained, ten, damp, calcarsous, medium dense, damp, calcarsous, medium dense, damp, calcarsous, medium dense, ticity, medium, tan, slightly enloarsous, possible highly meathered shale, 25.57 to 25.0° GRATEL - gray, some laminar definition, unsenthered.									d'hours	He Jose
CAY - calcarcous, section planticity, sacity, sacity sections, sandy stightly object, sandy slightly object, sandy slightly object, sandy slightly object, sandy calcarcous, sections, sandy slightly object, sandy slightly object, sandy slightly object, sandy slightly object, sandy slightly object, sandy slightly object, sandy slightly object, sandy slightly object, sandy slightly object, sandy slightly sli	EVATION		CEREM			-	RECOV.	SAMPLE NO.	(Delling sine, wa	ARKS for less, death of . If algorithms
CAY - calcarcous, section planticity, sacity, sacity sections, sandy stightly object, sandy slightly object, sandy slightly object, sandy slightly object, sandy calcarcous, sections, sandy slightly object, sandy slightly object, sandy slightly object, sandy slightly object, sandy slightly object, sandy slightly object, sandy slightly object, sandy slightly object, sandy slightly object, sandy slightly sli		=		0.07	to 13.51 -			A		
maximum, moist, sandy,		uluuluu		13.51	asticity, medium, pist, sandy to 16.8*	ten		3	Hole cave upon comp Water lev	ow 17.0% d to 17.5% letion. el at 17.5%
16.8° to 19.0° 3AND - fine grained, tem, calcareous, medium dense, damp, calcareous, medium dense, damp, calcareous, medium to low planticity, medium, tan, alightly enclareous, possible highly westnered makels. 25.5° to 25.0° SHAIR - gray, some laminar definition, unwenthered.		耳		334	ximum, moist, san	iv.			2. Drillin	\$1 No prob
10.07 3.MID fine grained, ten, calcareous, medium dense, damp. 19.00 to 25.51 CIAY - sectium to low planticity, medium, tan, alighity enlareous, possible highly weathered shale. 25.51 to 25.01 SHALE - gray, some laminar definition, unwenthered.		-3				ць			3. Jars:	
Calcareous, medium dense, damp, da	1	=======================================								
CLAY - medium to low plan- ticity, medium, tan, alightly enlarences, possible highly meathered shale. 25.5' to 25.0' SHALE - gray, some laminar definition, unweathered.		10. G		da	loareous, medium : mp.	tan, lense,			B. 0.6 C. 5.5 D. 6.8 L. 7.1	to 5.5° to 6.8° to 7.1° to 13.5°
posents many weathered that a state of the s		uhuu		ti.	- medium to low ; city, medium, tan, ightly calcareous,				G. 16.0 H. 16.8 I. 19.0	to 16.8' to 19.0' to 23.5'
25,5' to 25,0' SHAIR - gray, some laminar definition, unweathered.		\exists		PO	saible highly weat	hered	-	_		
SEALE - gray, some laminar definition, unweathered.	- 1	3					ŀ			
definition, unreathered.		ᆿ					i	K		
	ľ			de:	B - gray, some las finition, unweather	inar red.				
J J J J J J J J J J J J J J J J J J J		7	=					1		
- T. U. C.U.		3			B 5 25 01	Į	Г	3		
		4	_		r. D. 27,0'					
		크								
		=								
		\exists								
7		Ε	Ì							
7111111	- 1	\exists				- 1	- 1			
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ı lunlunlundun		-7								
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nlunlunlundundun					ARE DESOLETE	- 1				

SYM DQ NO ACY	IQN DATE	DESCRIPTION OF	REVISION	
U.S		GINEER DISTRICT, FOR OF ENGINEERS	ORT WORTH	4
DESIGNED BY:		AQUILLA LAK		
DRAWN BY:		EMBANKMENT AND S	SPILLWAY	
CHECKED BY:		LOGS OF BORI		
SUBMITTED BY:		INV. NO. DACW 63-80	-8-0085 DATED: A	UG. 1980
		CONTR. NO.PACHIG	3-8-6-0035	SEQUENC
ENGINEER:		DRAWING NUMBER	SHEET NO.	122

	LING LO	oc o	Southwestern	'O	t Bonth	Hole No. 8:6C-38A
Arui	113			TY. SHYULL	TYPE OF	MT 6" core: 3" fightail
Sel Line	AGENCY					ESIGNATION OF MILL
C) T	201	n-inee	City man	IL TOTAL D	ling 15	AKEN 1 C
Brez	DAILLER	-	816C-78 A	IL TOTAL P	OH GROUND	MATER #
			PRE. PROM VERY.	M. DATE NO	LE	22 Apr 75 24 Apr 75
		ROURDE		W. TOTAL C	ORE RECO	HOLE 5728,6
TOTAL D		HOLE	71.0'	Coast	107	Stratt
E FATIOR	DESTH	LEGEND	CLASSIFICATION OF MAYING	ME A	SON SON	T.E. Charles and hear depth of
	=				Ja.	
	-		0.0' to 2.0'			billing
	=		GRAVAL		B	
	=		loose to medium dens brown, moist, very c	layer dad	-	0.0' to 71.0' 3" fis
	-		sandy	6	0 6	Jar same
		5 ,	2.0° to 35.5°	6	4 Bo	y A. 0.0' to 2.0' B. 2.0' to 5.0'
	=		2.0' to 12.7' light		0	B. 2.0' to 5.0' C. 5.0' to 6.0'
	10	Ţ	weathered, with occa- iron-stained, tight	rional	10	Garten ameles
	-	\$	5.0° to 6.0° SAND	TONE,	0 2	1. 43.8' to 44.8' 2. 51.6' to 52.5'
	=		tan, poorly canent	ed	146	3. 50.7' to 59.6'
	=	5	8.4° clay-ironsto		2	BEAR BETALES
			10.3' to 10.4' al:		3	Core from 6.2" to 35. (boxes 1 to 7) was
			10.4" to 11.1" ti	ent, Mch		continuously wrapped.
)	angle fracture	19		Hole was left open
:	20 -	-32	11.7° to 11.8° cla concretion	ay-ironate	ne 4	after completion of drilling; check, 29
	1	=	12.31 to 19.81 prede	painantly.	,	Apr.
!	111	7	gray, slightly weath	100		3 **QCCast
-	7		15.7' to i4.1' ser clay-ironstone lens scattered grains of	es, with	, 5	846C-38 was of set accidently 520' SE of
1	=					proper location. 39- 36 was skilled 8.0' W
1	=	Jere	16.3' to 16.4'; 16. 17.2' to 17.4' Sal sodomately comenter	DSTONE,	25 27	of BA6C-38 at same
	=					Inte
	30 -		19.8° to 35.5° dark weathered, with some gray sandstone lenses	. uniraci	uroll	N-30 was drilled for
	=		20.8' to 21.0'; 28. 34.5' to 35.0' SM light gray, poorly	6' to 28	75;	logging, log was base
	3		M.5' to 35.0' SM light gray, poorly	DETONS,	1	on drill notion and outtings below 60.01.
	7		22.5" to 23.0": 25.	97 141 0	2	Sandstone is exposed in except had 2.4% had y low elevation of core
	=		26.74; with scame a of poorly ommented	SANDUTONE	35	.mle.
	=		23.0 to 23.4 LH gray, very hard, a:	ESTORE,	1 8	
	=		Cray, ray man, a	443	3	
	40	-	2017 20 2711 34		40	<u> </u>
1	=		noderately cemented	0		Mote
	=		35.5' to 38.9'		8 9	2.0' to 19.8' weathers 19.8' to Z. D. unweath-
	=	٢)	SHALE-SAND TONE		45.	a ered
	=	- -	shale, dark gray and with minerous soft se	ndstone'	,	Gargous, except for
	=		lenses, grading down sandstone, light gray slightly lignitic, wi shale partings	and to	10	well cemented sondsto and linestone lenses,
İ	=		slightly lignitic, wi	th numero	3	and 48.4' to 55.1' which is slightly cal-
	50		38.9' to 48.4'	6.	50	55.1' to 71.0' calcare
	7		SAHDOTORE			
			38.9' to 39.3' poorl argillaceous and limy		4, /1	
	=		39.5' to 39.5' light	G	,	
	=	1,	Well Carmited, Galgar	eous.	1 5 5	e l
			with several shale pe could not out with a		12	
	1		39.5' to 39.6' SHALE	10.	2	
	50	3	39.6' to 41.1' moder mented, but misb-gray	ately co-	59.	4
	1		monte bararela at sob	-	'	
			41.1' to 41.8' SHALE sandy, with alongato	era.		
	-		sandstone and a lines	tone lens		
	3		41.8' to 42.5' Links gray, sandy, well com not out with carbaloy	ented con	14	
			not out with carbaloy shale portings and li	mite so	•]
	1		42.5' to 42.7' SHALE	, senty		
-	m		42.7' to 43.8' modern	ately os-		
	_ E		43.8' to 44.8' SEALE.	444		
	nhan		ANTA			
	-3		44.8' to 48.2' poorly this beds of lignite	oe mte	, eri th	
	=	ĺ	45.4' to 45.7' mon-			i i
ĺ	7	- 1		verested.		, .
	بيبانين		with thin beds of at 46.6' to 46.7' well	ale		

huluuluu	48.4' to 71.0' MEALE 48.4' to 55.1' dark cay, waxy, mon-culcareous, grading demanded to culcareous along	
այրակումուսիումիումիումիումիու	bedding planes 50.1' to 50.5' SARROWN, soderately semented, light gray 55.1' to 71.0' greentaberray, calcareous, finalis, with lawy streaks	
hududun	7. 3. ● 71.0° in shale	tun lunchung.

48.4' to 71.0'

48.4' to 55.1' dark ony, wary, son-colourous, grading dominant to calcareous along bedding planes

50.1' to 50.5' SAMEWOOD , moderately comented, light gray

55.1' to 71.0' greenish-gray, calcareous, finalle, with lay streaks

7. B. © 71.0' in shale

DMLLO	ec LOC	-	Southwestern		t For	th Dist	
ASSILL .		n ar 5	-	TI. BATU	FOR E	LEVATION	6" core: 3" (labtail
ee Malling Ad	HENCY	_		Ped	line !	500	MATION OF MILL
Corps 9	-	-	8160-79	13. TOTA	EN SAME	LES TARE	
AME OF CA				M GLEV	ATION O	ROUNG W	TER 6
DARBATION O			DEG. FROM YEN	M. MATE		874	25 Apr 75 29 Apr 75
PEPTH BRIL				-		RECOVER	V 503 000mg - 000
POTAL BEPT	'ii 07 III	N. E	61.01	Jan	do	OIL	the second
EVATION D		rotus	CLAMPICATION OF MATER	IALS	T COME	PON OF	Petropes
	1		0.0° to 3.5°			Jor	
	4		GLAY			۸	Brilling
	=			k brown			0.0' to 10.5' 8" augu 10.5' to 47.0' 6" cor 0.0' to 61.0' 5" fish-
	3		low plasticity, dar moft to medium stif moist, very sandy	. , very		6	tell
	目		3.5' to 5.5'			c	Jar smool se
	4		GRAVE				A: 0.0' to 5.5' 3. 3.5' to 5.5' C. 5.5' to 8.5'
16	E,	-	tam, medium dense, sandy and clayey, t	very no	st,	D	D. 8.5' to 10.5'
	3		5.5' to 10.5'	'	10.5 L		Carton sarales
	1		CHAY	ļ	125	Bor	1. 11.8° to 12.7° 2. 15.3° to 16.2°
	-	==	5.5' to 8.5' low m	lasticia	40.7	,	2. 15.3' to 16.2' 3. 45.5' to 46.4'
	7		tan, stiff, moist,	sandy	19.7		loxed semples
			8.5' to 10.5' ten, saturated, sendy an	d very	602	16.7	7. 38.9' to 42.4'
	1		gravelly, with cobb	les to	18.7	2	Individual pieces wrap
20	1		10.5' to 22.0'		6		76.9' to 39.7' 79.7' to 41.0' 41.0' to 42.4'
"	1		SHALE		0.4	20.9	
	1	abla	10.5' to 14.5' were light gray and yell		22.0		846C-39 was drilled
	3	$ ule{}$	light gray and yell brown, with occasion elongate sandy lens		2.3	3	on emposite side of
	3	į.	Several low and hig	p soughe	255		street, as shown on mo said. 38-39 was drill 9.7' 8 of 646C-39, and
	1	-	very badly broken is some due to poor se onsing through grav	a this ating of	L	27.5	for purposes of member
	書	-	entree cohere ete o	SOUL COTAL	28 6	3	ical logging.
50	1	-	14.5' to 15.5' ali thered, dark gray, rust colored stains	mely w	-	4	Sater level
	1		rust colored stains pecially on bedding	ng, es	0.3		A hole was drilled 16, deep, 8' H of 8460-79, and 4" slotted plantic
	3	-	alightly cypeiferou	•	12.8	32.3	pipe was set to 14.0'. Due to osve-in, pea
	-1	-	15.31 to 22.01 was dark gray	eathered	L	5	gravel was not placed about pipe. Hole made
	3	-	15.3' to 16.8' 4	.25 m	0.4		water at 8.5'.
		Ξ	hand penetroneter fissile	, 200-	37.6	370	
	1	=	16.8" to 20.5" >	4.5,	6	6	
- 14	0	T.	fissile, waxy		39.0	187	
	1		20.5' to 21.5' 4	.01 to	6.3	7	Inte
	1		4.25 on penetrone non-fisable, does to break on beddi	ter.		42.4	0.0' to 9.6' 8" certs
			abon arling		4	6	10.5' to 15.3' weather
	3		21.5' to 21.7' 3 poorly emented,	ANDSTONE Light	0.0	46.4	thered 0.0' to 40.4' monosi-
	1		21.7' to 22.0'	ery ser	470	7.1	careous, except seve
	1		22.0° to 36.9°				in send stratum 40.4' to 61.0' calcar 46.4' to 61.0' log is
54			SANDSTONK				based on autiliars an
	-		22.0' to 25.2' 114	at brose			drill action only
	1	ΞŽ	poorly occented, wi shale pertings and	thin bed			
			of lighte; some on here	70 1084			
			25.2' to 26.1' LD: light gray, well or	ESTORE			
			light gray, well or sandy, with memorou partings and a less	of so			
	1		partings and a less erately essented so could not out with	a carbal	оу		
		Ē					
	1		26.1' to 27.5' lig moderately concrete escanional shale pe and thin beds of li	rtings			T. B. 0 61.0' in chale
	4		and thin beds of 11 27.5' to 27.8' no				
	=						
	三		27.8' to 29.1' lig well operated, calc interbodded with th	areous.	of		
	3		lighte; could not earbaloy	aut min			
	=			int brown			
	크		29.1 to 31.2 lig moderately omested several beds (0.05	with of			
	=		lighte and lighter		0000		
	目		31.2' to 31.5' Like light grey, well so sandy with management	ESTORE.			
	4		sandy with management partings	shale			
	<u>հարտիսոփումուսիումումումումում</u>		31.5' to 38.9' lig	ht brown	,		
	=		noderately someted this beds of light partiags	e and an	ale		
	4		33.1' to 33.6'; 3 with 0,1' bets of	4.11	34.8		
1	-		with 0,1' beds of	interi-	diei		

Thun the	shale and sandstone 57.7' to 38.1'; 38.4' to 38.7' SBALE
ոկավավակարարու	36.9' to 61.0' SBAIR 38.9' to 40.4' dark gray, sett, waxy, so-acticareous, with conscional wite spor of line 40.4' to 61.0' greenish-pray, calcarroon, with list joctate, sederately hard 45.9' to 46.4' slightly less calcareous

RECORD DRAWI	NG-WO
EVALUE NO. ACTION	
U.S. ARN	Y E
DESIGNED BY:	
GRAWN BY:	
CHECKES SY:	
SUBMITTED BY:	
EMOINEER:	

DRILLING	LOG	Southwestern	Fort Fort	h Dist	Pict SHEET;	
21111	adama a K		12. BAROFACTURE	NA DES	6" opper 3" fishtail	
1704 Of	Inclusers	ing and a	Fedling 1	500		1
AME OF BAIL	LIM		IL TOTAL MADE	OWNE T	NORES 7	<u> </u>
VENTIEAL			15. BATE HOLE 17. BLEVATION TO		25 Apr 75 29 Apr 75	
EPTH BRILL	ED INTO ROCK	50,51	M. TOTAL CORE P	ECOVER	Y FOX BORNES - 894 - 3	
		CLASSIFICATION OF MATERIAL	a Cont	SAMPLE	Continue the same and a	
MECTION OF VERTIENL		10.5' 20.5' 30.5' 30.5' 51.0' CLANSTRUCTION OF ANTENNA O,0' to 3.5' CKAY low planticity, dark noft to medium stiff, notst, very sandy 3.5' to 5.5' CRAYE tam, medium demse, ve mendy and olayer, to 5.5' to 10.5' CRAYE tam, stiff, moirt, notst, notst, notst, very sandy 3.5' to 10.5' t	The state of the s	Jor A Boy	Telline One of the second service of the se	SMALE - So. 9' to 40.4' dark gray seri, wax, new-oulderway, with constional mid-spe of line with livy ponetal, notomataly law oulderway ponetal, notomataly law oulderway as law oulderway as law oulderway as law oulderway as law oulderway law out of line with law ponetal, notomataly law oulderway
60		22.0° to 25.2° light poorly commended, with shale partings and the of lightles some correlations and the of lightles some correlations are stated as a second of the stated as a second of the stated as a second of the stated as a second of the stated as a second of the stated as a second of the stated as a second of the stated as a second of the stated as a second of the stated	in some in some in the day in the		7. 3. 0 61.0' in shale	RECORD DRAWING-WORK AS BUILT THIRD NO. ANTION DATE DESCRIPTION OF REVISION U.S. ARMY ENGINEER DISTRICT, FORT WORTH CORPS OF ENGINEERS FORT WORTH, TEXAS AQUILLA LAKE AQUILLA LAKE AQUILLA CREEK, TEXAS
						EMBANKMENT AND SPILLWAY CHECKED 6Y: LOGS OF BORINGS 8AGC-38A AND 39 BUBBLITTED 6Y: INV. NO.DACMG5-80-8-0085 DATED: AUG 1980

	Tory	rition	MAN TALL	ATISE		Hole No. PASC-40
INNE, LING LEKS		Southwestern		Fort !	orth l	District or 3 sectrs 6" opre: 3" fishtail
		riand.				MANAGE OF BRILL
जिल्लाहरू हो <u>विश्व</u>	near	d mate		Paili	OYER	DETUNCED UNDERTURNED
		BA6C-40	M. TOTA	U. HUMB!	ER CORE	noxes 13
Brener Micrea (d'able Micrea (d'able)			W. BATE		1647	16 Apr 75 17 Apr 75
TIM : 4 WELL OF 271CH	HOEN	3.01	17. ELEV	ATION T	OP OF HO	NE 535.1
9'FTH 1341 . LE3 94TO	40CX	68.0° 71.0°	0	2	7.0	Backto
EV-7104 1EPTH LE	GEND	CLASSIFICATION OF MAYESMA (Proorgation)		S CORE	SAMPLE MG.	(Profiling Fine, major loos, depth of meethering, see, of algorithms)
		-		Ť	Jar	
		0.0' to 2.0'			B	Deilline
= 5		SAND			c	0.0' to 6.0' B" auger 6.0' to 70.0' 6" core 0.0' to 71.0' 3" finh
3:		dark brown, loose,m slightly clayey, fin	D1 276,		0	tail
	<	2.0' to 3.0'		.60 L		Jar es ples
=======================================		GRAVEL		09	Box	A. 0.0° to 2.0° B. 2.0° to 3.0° C. 3.0° to 5.0° D. 5.0° to 6.0°
10 - 3	\$	medium derme, yellor moist, very clayey, small, well rounded	with	100		2. 5.0' to 6.0'
=55	â	of quarts and irons	tone	1	H.7	Carton carples
3	75	3.0' to 10.0'		02		1. 12.2' to 13.1' 2. 19.0' to 19.9'
78		SANDSTONE		140	2	2. 19.0' to 19.9' 3. 24.9' to 25.8' 4. 33.0' to 33.9' 5. 68.4' to 69.3'
1		red, yellow, tan, as weathered, fine-grain poorly occurred	ned,	03	w a	*Zater level
3		5.0° to 6.0° SHALL	s, gra		16.9	Hole was drilled \$2' X
1 2		and ten, thin-bedded	•	,	3	of 8a6C-40 for observation well, but had auger refusal in sand-
2		9.3' to 10.0' very cemented, with some lenses of shale	thin	0.1		stone at 5.0'. Could
	S	10.0' to 40.5'		22.0	22.2	a finitail or rockbit. Thus, 4" siotted, planti
]		SHALE		6	4	pipe was set in 8A6C- 40 to 16.3', where it had caved. 24 hour
33		10.0' to 13.5' light wonthered, with never angle, rust-stained	t gra			check - 10.51.
1 - 15		angle, rust-stained massive; core recain	fracto	res.		Hote
- 186		upon drying		00	27.9	23.9' to 70.0' weathered
1. 400	-	10.0° to 10.2° wi	th ol	300	5	0.0' to 64.5' non-cal
		13.5° to 21.7° gray	, wen	h-L		64.5' to 71.0' calcarpor
- 3 2 4		low and high angle f winish tend to open u	ractur		32 2	57-40 was offset 21.5' S if 846C-40 for purpose of geophysical logging
		drying and are stain	ed ru		6	log is based on cuttings and drill action below 70.0'.3F-40 is 0.2'
1 3	- 7	20.3' to 21.6' se high angle fractur above, which intor	es, as	0.0		70.0'.3F-40 is 0.2' higher than 8A6C-40.
1 3	,	at 21.0		38.0	37.4	E
40		21.7' to 20.9' dark slightly weathered,	CPOY		7	E
	-			L		<u>-</u>
1-3	-	angle fractures, and lenses of gray, soft	thin	tone	42.0	E
1 4	-	23.9' to 38.0' dark	CTAY	1	В	E
	_	 unweathered, with nu lences of sandstone 	Beron		46.Q	Ē
		26.7% to 27.8° hi fracture, healed w	(2) and	le	70.0	Ē
1 1			- 1		9	F-
50-	-	27.8' to 27.9'; 29 30.1' SANDSTONE,	poorl	500	50 5	E
		ommitted.				E
		36.8' to 37.4' wi			10	E
1		38.0' to 40.5' sand numerous, small, elo lenses of sandstone	y, with	540	546	E E
1 = :	-	lenses of sandstone 40.5' to 63.2'		0.2	"	E
3.		SANDSTONE		58.0	"	E
1, 3		40.5' to 42.0' gray.	- 1	t.5	59.3	E
3		of shale and scatter	ed lap	ai te	12	E
=		41.71 undemented	+	62.0	-	E
		42.0' to 46.1' with	7800	6	63.9	E
	1	erous partings of she slightly lignitic	ale,	66.0		E
]	-	43.5° to 43.6°; 43. 43.9°; 44.0° to 44.	8' 1	L	13	E
	1	uncerted		0.4	69.3	E
70-	-4	46.1' to 47.5' modes to well seconted, gre	dine	100	6 F. 3	E
		downward to moderate	y			E
		47.5' to 50.7' poor) with very thin beds o	y 000	ert ed		F
-						F
=		47.3' to 47.7'; 48. 49.1' to 49.2'; 49. 50.0' to 50.7' 1m	6' 15	49.8		E.
luuluu		thinly bedded shale sandstone	and			E
1 1		50.7' to 53.3' moder	stely			E
1 7	ı	ca.ented, with musery	us, ph	1 1	•	F

	beds of lignite on bedding planes, but mendstone appears massive	
	53-3' to 54.6' moderately to	
	well excented, ligattic at	
	top to mea-lignitie at base	
	54.6' to 59.4' mith very men-	
	eress lesses of thinly belief	
	55.4° to 56.8° productionally	
	senistone	
	59.4' to 61.8' moderately on-	
	nemted, with interbedded light to	
- 1	mented, with interbedded tiget to seems at 59.2° to 59.3°; 59.8° to 59.9°; 60.3° to 60.4°;	
	light to tends to be concep-	
	trated along bedding	
	61.8' to 63.2' moderately to	
	wall cemented	
	63.2' to 63.9'	
- 1	SHALK	
- 1	dark gray, with occasions beds	
	of mendatone	
	63.9' to 64.5'	
1	AARDSTORE	
	63.9' to 64.2' poorly squarted	
	with shale partiags	
	64.2' to 64.5' wall comented,	
	brownish-gray	
	64.5' to 65.3'	
1	LIERSWORE	
	light gray, well ognested.	
	ecystalline, sandy	
	15.31 to 69.31	
	MALE	
-	greenish-gray, finalle,	
	calcareous, with liny streaks	
	P. B. 0 69.5' in male	

E HIGH

reds of lignite on bedding planes,
wit membrione appears markets

5.3° to 54.6° moderateds to
real ownersed, lignitic alreal ownersed, lignitic alreal ownersed, lignitic alreal ownersed, lignitic alreal ownersed, lignitic alreal ownersed, lignitic allane and annaturant

55.4° to 56.3° predominantly
membrione

55.4° to 56.3° predominantly
membrione

55.4° to 56.3° predominantly
membrione

55.4° to 56.3° predominantly
inguite tends to be conceptented, with interbedded lignite

18.9° to 65.3° moderately to
mall ownersed

12° to 65.9°

LLE —

15.9° to 64.2° passily elected

16.1° to 65.3°

16.2° to 65.3°

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Amelia		POPT	orth M	S' murer: 6" core	4		
Midd (Communication or Sec	aw			SHATIST OF BALL]		
rns of Parineer			Mr 1500]		
NO. (As about as done to make)	n460-41	14. YOTAL HO			-		
THE OF HOLE		M. GLEVATION	MOUND Y	ATER	7		
		7. CLEVATION	TOP OF IN				
H BRILLIP MYS ROCK L BEFTH OF HOLE		IS. TOTAL CO.	175	TON SERVICE 975	4		
	CLASSIFICATION OF MAYER	250	225.0	Contract of the last of	1		
	•	1	JAFA	•	ŧ:"r ı	· =	
1 4 1	0.00 to 2.01		6	Brilling			calcareous
	0.0' to 1.0' low	n) and in	D	0.0' to 6.0' 8" augu 6.0' to 63.0' 6" cor	EII	4	25,3' to 25,4' SAMESTEER, moderately hard, slightly calcargous
	house, very stiff, sendy, with small	noist,	E	lar nemies	È	3	25.4' to 30.1' with measures
				A. 0.0' to 1.0' B. 1.0' to 2.0'	almulmulmulmulmulmulmulmulmulmulmulmulmul	1	pooksts, lenses, and this beds of sandstone
	1.0° to 2.0° bear girtly gravelly, wi of soft, calibbe-	ike naturia	Boy	C. 2.0' to 3.0'	E	킠	27.4' to 27.8'; 28.4' to 28.6'; 29.0' to 29.5'
10-1-2	2.0° to 3.0°	10.0	2	2. 5.01 to 6.01		1	sandstone lenses, light gray
- 22	GRAVEL	0.0		1. 6.0' to 7.0'		3	30-1' to 45,4' maxy
3	poorly graded, tan dense, noist, well very elevey, to 1"	rounded,	12.7	2. 18.8' to 19.7' 3. 20.6' to 21.5' 4. 21.6' to 22.3'	E	1	35.2' to 35.3' SAMSTOR, light gray, poorly commiss, thinly interbedded with
	3.0' to 44.0'	11.0	2	5. 25.4' to 26.3'	andan handay	T	ahale
	SHALE	0.5	17.2	6. 34.7' to 35.4' 7. 36.0' to 36.6' 8. 36.6' to 37.5'	F	4	34.0° to 34.2° SAMMSTEE, light gray, well comerced, calcargous
	3.0° to 5.0° gray resorked with send	and tan,		9. 38.1' to 39.0' 10. 39.5' to 40.4'	E	1	41.8' to 42.1' SANDSTONE.
20 2	very extoureous to ghtly oxloareous, of soft, oxlinhe-			11. 54.5' to 55.4' 12. 60.2' to 61.1'		7	poorly omnerted
- 3 選	5.01 to 8.01 ten	L 0.	5	Tater level		1	42.2' to 42.4' sandstone larses 43.4' to 44.0' sandy
				8" augur hole was dril from 0.0" to 9.5", of 12.5" N from 8A6C-41.	10	ուկումումումումումուկուկումումումումումումումումումում	44,01 to 53.41
	with cocazional io tight fractures, a slongate pockett o which increase dos	f send. L	25.8	12.5' M from 8A6C-41. Slotted, plastic pipe was installed, and ho		1	NARDSTONE
5	lower 0.1' very se	ndy	4	was backfilled with	E :	=	44.0' to 45.7'brown and light brown, moderately comented, calcarsous to non-calcarsous,
	8.0' to 9.6' lost	G	1	24 hour check - try.	E I I	4	very fossi liferous, with mm-
30	9.6' to 10.2' SAN well commuted, cal gray, could not ou	Careous,	19.3	Date 0.0° to 5.0° calcare		3	erous oyster shell:s
	perbaloy bit	\$1.0	2 5	0.0' to 5.0' calcared 5.0' to 53.4' non-cal careous, except well		1	to poorly concreted at 47,3°,
	10.2° to 15.2° we prodominately light	t gray		53.4' to 62.6' calcar 5.0' to 22.3' weather 22.3' to 62.6' univer-		4	fossiliferous, mostly non- calcareous, with occasional shale partings
	with maserous along mandy mones	74.0	7	22.3' to 62.6' univer-	E.	4	47.8' to 48.5' SMALE, dust
- 1	of poorly ossent	with beds O.		N of 8460-41 for pur-	E	4	gray, interbedded with porly comented sandstone
8	and clay-ironate	G.		poses of grouplysical lagring and in order t pemetrate the Georgeto	E:	. 🗐 📗	48.5' to 49.3' same as 14.0' to 45.7' with some light te
2	low and high and yellow-stained f			penetrate the Georgeto Formation,		luuluu	
40		6	,				49.3° to 50.2° gray, poprly to
- 25.00	13.2' to 14.0' ve top, grading downs	ry sandy at	42.1	Drillers notes on 30		mulmi	non-neleareous, slightly fessiliferous, slightly lignitie
- 72	oliyey SANDSTONE, 30 open fracture,	13.7' to 14	7	125.5' to 126.0' ha	E	3	50.2' to 51.8' light gray.
	14.0' to 15.5' 11 with mearous tigh	ght gray, Le	2	136.5' T. D.	E	3	well comented, calcarants, with very meserous partities of shale which increase formers, slightly fossiliferous, ap-
131	short, ironstained sandy in upper 0.2	fractures,	7.3				slightly fossiliferous, up- prosches sandy limestone
	14.7° to 14.9° moderately occurs	SAND TOUR,	9			-1 (51.8' to 53.4' grayish-brown,
50	anis-teamer, au	10.0				4 1	moderately to well comented, with memerous partings of shale, mostly mon-calcarrous, gyritiferous at
50	15.5° to 17.2° al theret, preferint with less manerous	aly gray	51.1		EIII	1 1	53.4° to 53.7°
	at above	fractures,				4	LD-ESPORS
- "	16.1° to 16.3°	olay-imarto	•			1	gray, wall occented, cardy, with several solution covaties
. 1	16.6" to 17.2" tight, imp-stel	ides avelo,	56.1			= 	and partings of shale
	17.2" to 22.3" no	LO.	10		ասիակակավարիա	ահամասկավարևակակա	53.7' to 62.6'
60	emopt stained fro	otures 60.				4	greenish-gray, calcareous, with whisps of line, moderately
12	19.2° to 19.3° lew angle fractu	Staines, tie	61.3			=	with whisps of line, moderately hard
	20.0' to 20.3'	MA MELOT	# 62.4	7. 3. 0 62,6' in she		4	54.1' to 54.5' lemmer of liny a mintone
🖥	21.5' to 21.6'	70			<u> </u>	٦ ١	
uluuluu	stone, stained		1 1		E		
	21.6' to 22.3' softer, very smo	a little oth terture			<u>E</u>		RECORD DRAWING
70.	22.5" to 24.0" un with numerous sone	weathered,			E		TESONS BINATIO
dumlim	24.0' to 24.3' 84	IDSTORE,			Ē		1111
=	herd, alightly cal	Delection			E		SYN DO NO ACTION
1 =	24.3' to 24.5' a notter	TIEF10			Ē.		U.S. ARMY
3	24.5' to 24.6' 84	MDSPORE,			E		DESIGNED BY:
	24.6' to 26.8' wa	17			Ē		
1 1	25.0' to 25.1' moderately hard,				and tradition built and tr		DRAWN BY:
		-1.	ال		E.		
							CHECKED BY:
							SHOWITTEN SY:

 (f_j)

DRILLING LOG	CH	VISION	MSTALL	ATION			SHEET
c illa			OFT TOTAL DISTRICT OF 2 SHEETS WE SEER AND TYPE OF SIT C' 10 TOTE 6" 9 libs & core TO DAYOU FOR ELEVATION SHOWN TEST MELL				
क्रीडिक विकास	ar 3ca		7				
LLING ASENC			_			SHATION OF DAIL	
Fig. of no.	n-ers	ng MHo†	11. 707	L HO OF	OYER	DISTURBED	UH DI 3 TUM BED
		84600-42			A COME S		5
TECHS.				ATION G	ROUND WA	TER .	
CAN'S PACE					ISTA	ATEO I	COMPLETED
PERFER CIN					3P OF HO	June 75 503,81'	4 June 75
CHNESS OF OVER							
HTH DA-LLED (AT			19. 379	TURE 9	HEPECT	Buchte	
TICH LEFTH		CLASSIFICATION OF MATERI	ALS	CORE	BOX OR	REM	ARKS
	4	(Description)		ERY	HO.	(Drilling time, m.	ARKS mar less, depth of the if olgosifeant
=							
=		0.0° to 30.0°				Dect 1	ling
1 =			Ì		Jar		
1 =1		CLAY			A	0.0' to 20	0' 8" alge
-		0.0' to 10.0' low	plastic	ity.	"	Eb)	
=	1	brown to dark brown	, very	stiff,	-		0.0° 6" oor
1 -1		0.0' to 10.0' low prown to dark brown moist, sandy, except sandy, 2.0' to 5.0'	t Eligh	CTA		Dowland	sannles
	1				8	Donison	
		10.0 to 12.0 bec	omes li	ght		1. 20.0' t	0 22.01
]	Ì	brown, slightly sand limy streaks	dy, wit	41		2. 22.0' to 3. 24.0' to	o 24.0'
10-						3. 24.0' to 4. 26.0' to	0 28,01
===	ļ	12.0' to 16.0' low light brown, stiff,	plasti	city,	C	5. 28.0° t	
1.3	l	very sandy	,eij 1			Note: no s	ample from
						30.0' to 3	Z.0'.
=	į	16.0' to 21.0' bec	comes a	sry.		Jar sa	amplea
	ı				D		
1 =	ĺ	21.01 to 29.01 low	plasti	city,		A. 2.0° to B. 5.0° to C. 10.0° t D. 12.0° t E. 16.0° t	5.01
-=	I	tan with some gray, wery sandy, with some	sandy les of	sand	\vdash	C. 10.01	0 12.01
		at 26.0'				D. 12.01	0 16.0
		20.01 40.70 01		nd-	6	E. 16.0" t	0 20,01
3	I	29.01 to 30.01 becomently gray, very	ones pr	ddon-	-	F. 22.0°	
10.	l		-		\vdash	H. 26.01	
~ =	١	30.0' to 32.0'			Can	1. 28.0°	
1 =	- 1	GRAVEL			1		
	- 1				2	Carton	samples
=	1	no sample			1	1. 35.71 +	0 36.61
		32.0' to32.2'	1			1. 35.7° t 2. 38.0° t	0 38.91
=		LIMESTONE			3		
-=					\vdash	Water le	
3		light gray, well com	ented,		4	Hole mekin	ng water at
		slightly stained, as	undy		-	17.0'; bac completion	kfilled afte
1 =		32.21 to 39.51			6	compression	•
30-	ļ	SHALE + =			<u></u>		
E					$ \mathbf{x} $	_	ote
1 = .		32.21 to 34.01 dark	gray,	32.0		0.01 to 3	34.0 non-
1 7		32.2' to 34.0' dark unweathered, nonfrac non-calcareous, with	tured,	L		32.21 to	34.01 non-
1 _=		erous lenses and thi	n beds	34.0	Bur	sandsto	ous, except
1 3	-15	of calcareous and no	m-cai-i	8.3	100	Ju.U. to	JY.5' CRICE
=	L				1	Primary i	s unweather
		to grinding by grave	1, 00	W0.12		61.0' for	drilled to
E	L			4		geophysic	al logging.
= .	L		1	0.5		3F-42 was	Afilled 6.0
10 =			1		28	same clev	
1:0	-			400			
=							
	- 1	34.01 to 20 C1	deb	ev-			
1 3	- 1	36.0' to 39.5' green moderately hard, calc	TOUR.	,			
E		with limy whisps					
=		T. D. # 39.51					
E. I	- 1	-7 -4 - 3743					
	- 1		1				

DRILLING LOG	Southwestern	IMSTALL	-t Tor	th Dist	Hote He. 177_47		
Amilla		11 BAT	AND TYP	E OF BIT	6° 0 %) and core		
Aquilla OCATION (Cantingon	ar franke		12. MANUFACTURER'S DESIGNATION OF DRILL				
Corps of the	Recrs	14. TOT	iling	1500	DISTURBED UNDISTURBED		
AND OF BRILLER	6DC-43	IL TOT		R CORE	OXES 3		
Brever MECTION OF HOLE		IS. ELE	VATION 6	ROUND WA	TER .		
DABULLET COMER	MED DEE FROM 1	M DATE			June 75 3 June 75		
HICKWESS OF OVERSE EPTH DRILLED HITO		N. TOT.	AL CORE	RECOVER	FOR BORUES OFF		
OTAL DEPTH OF HOL		20	upt (200	rach		
VATION DEPTH LEG		ERIALS	RECOV.	BOX ON	(Dolling size, varior loss, depth of residential, of a., if algorithmed		
•				TorA			
1 =	0.0' to 22.5'			8	Drilling		
=	CLAY			CAA			
- 3	0.0' to 0.8' low	n) astici	.	1	0.0' to 2.0' 8" auger 2.0' to 26.0' 6" 0 Rbi 26.0' to 39.0' 6" core		
1 =	brown, stiff, sois	t, sandy		2			
3	0.8' to 3.0' been brown, very a ndy	mes ligh		2	Jar manules		
1 = 3		-144-4		3	A. 0.0' to 0.8' B. 0.8' to 2.0'		
]	3.0° to 5.0° low brown, very stiff;	prastici	andy	4	C. 4.01 D. 6.01		
10 -	5.0' to 22.0' low light brown, very			-	E. 8.0° F. 10.0°		
]]	light brown, very very sandy	stiff, m	ist,	5	G. 12.0' H. 14.0'		
=	13.0° to 15.0°	with smal	1.	6	I. 16.0° J. 18.0°		
-=	irrogular, lime	nodul es			K. 20.01		
=				7	I. 22.01 E. 24.01		
=	17.01 becomes v	ery noist		0	N. 26.0° 0. 26.0° to 28.0°		
s sulminulumlumlumlumlum				8	Denison samples		
=	19.0' becomes a	lightly		9	1. 2.01 to 4.01		
20 -	1	n al		\vdash	2. 4.0' to 6.0'		
=	21.0' approache	e crayes	Sand	10	4 0 01 4- 10 01		
1 3	22.5' to 24.0'				5. 10.0° to 12.0° 6. 12.0° to 14.0° 7. 14.0° to 16.0°		
1 = 1	SAND			iı			
1 =	light brown, mediu	na dense,	040	12	9. 18.0° to 20.0° 10. 20.0° to 22.0° 11. 22.0° to 24.0° 12. 24.0° to 26.0°		
1 3	24.0' to 29.9'		26.0	S.	11. 22.0' to 24.0'		
1 3	GRAVEL		280	o			
1 =			L.	Box	Carton sample		
30	24.0 to 26.0 li	ly grade	30.0	1	1. 36.8' to 37.7'		
× -	W. GARTHORN S . MY ATT	cobbles	nded,	318	"Tater lovel		
- 12	Zi; 26.0° to 28.0° be	occes ve	310		Hole making water from 24.0° to 29.9°. Four		
1 7 7	T. CIRVEN		L.7	2	inch plastic sinc, slot from 9.0' to 29.0' was		
			us		set to 29.01, where hol		
	maximum diameter 6	"! every	ning	36.0	backfilled with pea gra		
	5.1	t the ap	G	3	to 10.0'.		
1	<u>*</u> .		0.5	38.8			
40			-	-			
1 3	29.9' to 30.0'				Was .		
=	LD:ESTONE				Inia		
1 =	light gray, well o	ecented.			0.0' to 30.0' calcareo 30.0' to 34.2' mon-cal careous shale with		
=	sandy, slightly at	ained			calcareous sandstone		
	30.0' to 34.2'						
[_]	SHALE				Primary is unweathered. 3P-43 was drilled to 121.0° in order to pen-		
3	dark gray, unweath	ored, no			etrate the Georgetown F		
	reactured, non-cal	careous,	with md		mation and for purposes of geophysical logging. It was drilled 6.0' ?		
=	thin beds of calca				It was drilled 6.0' F of 6DC-45 at the same		
1	32,7° to 33,0° SA	NDSTONE.			elevation.		
1 =	brownish-gray, sod	lerately	me		Driller's notes		
=			44.00		32-43:		
=	34.2' to 35.1'				65.0' to 66.0' hard 85.0' to 67.0' softer,		
E	LIMESTORE				mandy 106.0° to 121.0° hard,		
=	light gray well or sandy, with irrogs	lar, elo	_		cesen ted		
4	gate lenses of lig non-calcareous cla	ht brown	ne,		106.0' to 106.5' ver		
=	and occasional sha	le parti	N.		111.0' to 111.5' war		
1 = 1	35.1' to 38.8'				121.0' T. D.		
Ε.	SHALE						
	greenish-gray, mod	ierately					
=	hard, calcareous,	with whi	sps of				
=	36.4' to 38.8' mo	derataly					
1	vith 0.05' at 30	of soft	er.				
1 =	greenish-gray shal						
արարարարարարարարարարություն	T. D. 0.38.8' in the	u•					
1 - 1							

ole No. 199-47 SHEET OF 2 MEETS Southwestern D. DIE MOTTH District 00 2

D. DIE AND TYPE OF BIT 5" D TD) and core.

11. SAYOM FOR ELEVATION SHOWN ITS MEDICAL STREET MANUFACTURES A DESIGNATION OF SAIL Palling 1500 6DC-43 2 June 75 3 June 75
17. ELEVATION TOP OF HOLE 503.4
N. TOTAL COME RECOVERY PRO-29,91 29.91 IN TOTAL COME RECOVERY FOR SOMES

9.11 IN SERVICE OF PRECOVERY FOR SOMES

79.01 IN SERVICE OF PRECOVERY FOR SOMES

CLAMIFICATION OF BAT CHIALS

CLAMIFICATION OF BAT CHIALS

(Physical prime)

(Physical prime)

(Physical prime)

(Physical prime) Ording time, under lace, steps; of meathering, etc., if olganizated TorA 8 0.0° to 22.5° Drilling Can CLAY - -0.0' to 2.0' 8" auger 2.0' to 26.0' 6" D Hol 26.0' to 39.0' 6" core 0.0 to 0.8 los planticity, brown, stiff, moist, sandy 2 Jar mentler 0.8° to 3.0° becomes light brown, very a ndy 1. 0.0° to 0.8° to 2.0° C. 4.0° D. 6.0° E. 8.0° F. 10.0° G. 12.0° H. 14.0° J. 16.0° J. 16.0° 3 3.0° to 5.0° low plasticity, brown, very stiff, noist, sandy 5.0° to 22.0° low plastic ty, light brown, very stiff, mist, very sandy F, 10.01 G, 12.01 B, 14.01 T, 16.01 J, 18.01 K, 20.01 H, 22.01 H, 26.01 O, 26.01 to 28.01 5 13.0° to 15.0° with small, irregular, line modules 7 17.0' becomes very mais Denison mamples 1. 2.0' to 4.0'
2. 4.0' to 6.0'
3. 6.0' to 8.0'
4. 8.0' to 10.0'
5. 10.0' to 12.0'
6. 12.0' to 14.0'
7. 14.0' to 16.0'
9. 18.0' to 20.0'
10. 20.0' to 20.0'
11. 22.0' to 24.0'
11. 22.0' to 24.0'
12. 24.0' to 26.0' 19.01 becomes slightly gravelly 9 21.0' approaches clayey 10 22.5' to 24.0' įŧ light brown, nedium dense, very moist, very clayey 12 26.0 **S**. 24.0' to 29.9' 200 GRAVE, - -Carton sample 24.0' to 26.0' light brown adding done, poorly graded, 1.2, a saturated, clayer, stall rounded, everages 7, with orbides to 2' 26.0' to 28.0' becomes very 32.0 clayer Box 1. 36.8° to 37.7° -1 "Vater lovel liole making water from 24.0' to 29.9'. tour inch plastic since, slottwing from 9.0' to 29.0' wan set to 29.0', where hold had caved in. lible was backfilled with pee gravel to 10.0'. 2 L.0 28.0° to 29.9° with numerous rounded to elongate cobbles, maximum diameter 6°; everything was washed away but the cobbles 16.0 3 38.9 29.91 to 30.0 Mote LE:EFFONE - -0.0' to 30.0' calcarecte
30.0' to 34.2' mon-calcarecte
carecus shale with light gray, well occented, mandy, slightly stained 30.01 to 34.21 34.2' to 36.8' celcare Primary is unweathered. 37.45 was drilled to 121.0' in order to pen-etrate the Georgetown F mation and for purposes of geophysical logzing. It was drilled 6.0' T of 50C-45 at the same elevation. dark gray, unwenthered, nos-fractured, non-calcareous, with nuserous leases, podiets, and thin beds of calcareous and non calcareous sandstone 32.7' to 33.0' SANKSTONE brownish-gray, moderately cemented, slightly malear Driller's notes 3F-43: 34.21 to 35.10 65.0' to 66.0' hard 83.0' to 87.0' softer, 83.0° to braw sandy 106.0° to 121.0° hard, passented 106.0° to 106.5° very hard 111.0° to 111.5° very hard LILESTONE - light gray well occurred, sandy, with irrogular, elo-gate lenses of light brown non-calcareous olay-tronstone, and occasional shale partigs hard 121.0' T. D. SHALK - -38.4° to 38.8° moderataly cemented, wary light gray, with 0.05° at 30° of soft greenish-gray shale T. D. C.38.8' in shale

Hele No. 8A6C-44
SHEET 1
OF 4 SHEETS
PO: 3" fishtail DRILLING LOG Southwestern TOT NOTE DISTRICT

NO. SIZE AND TYPE OF BIY 6" COZ Aquilia Pailing 1500 Corps of invincers 14. TOTAL HUMBER CORE BOXES 8 IN ELEVATION ROOMS PATER | COMPLETED |

N DATE HOLE | PROPERTY | CAPTION |

N DATE HOLE | PROPERTY | CAPTION |

N DATE HOLE | PROPERTY | CAPTION |

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N Brewer DIRECTION OF HOLE 36.3' 73.7' 101.0' HCKHESS OF OVERBURDEN BYATIO DEPTH LEGEN (British that, we're loss, depth of meeting are, or, if significant . 0.01 to 15.01 brilling CLAY - -0.0' to 35.8' B" augus 35.8' to 75.0' 6" core 0.0' to 101.0' 3" find tail 0.0' to 3.5' low plasticity, bromnish-gray, stiff, moist, sandy 8 Jar semples c 3.5' to 5.5' becomes he A. 0 0° to 3.5° A. 3.5° to 5.5° to 5.5° to 5.5° to 5.5° to 6.5 5.5' to 8.0' low plastic brown, very stiff, noist, sandy, with small line no D 15.0' to 25.5' E 15.0° to 19.0° tan, medium dense, moist, slightly clayey F Carton samples 1. 43.0° to 43.9° 2. 51.5° to 52.4° 3. 59.8° to 60.7° 4. 73.1° to 74.0° G 20.5° to 23.5° brown, well graded, slightly clayey, gravelly to 3/4" H 23.5° to 25.0° Hole is making water from 32.0° to 36.3°, in on plastic pipe, slotted from 11.5° to 41.5°, was set from 1.5 to 41.5° and backfiller with pee gravel to 4.5° I low plasticity, tan, stiff, soist, very sandy J 25.0° to 27.0° brown, we graded, slightly claysy, gravelly to \$/4" 0.0' to 36.3' calcare 36.3' to 70.7' non-cal carsous, except well occurred zones 70.7' to 101.0' calcar 27.0' to 34.0' ten, setting dense, olayer, with somes of gray, annly clay; very maint to 32.0', asturated 32.0' 33.0' 35.0'. L me to core loss, depth of weathering is uncer-tain. 32-44 was drille 5.0' Wo 6460-44 at as elevation for purposes of geophysical logding, log is based on drill action and ortilary M 35.8 7 2.0 Box CLAY - low plasticity, light gro below 74.3 CI 36.0' to 36.3' 0.5 2 45.0 tam, medium danne, mandy and olaysy, with cobbles 0.1 47.5 SHALK - -49.0 36.3' to 45.0' with massoup lenses and beds of as.dstone.6 3 1 36.3' to 36.4' alight! weathered, gray with so red and tem 6 0.6 4 36.41 to 37.51 mo rec 37.5' to 37.6' Barrer light gray, well owner calcare us, could not with a carbaloy 3 28.4" to 38.6" BANDST 38.6° to 38.8° with mm - ¿ erous, alongate lenses efo.o salcareous sandstone and 6 7 39.1' to 39.4' with ser lenses of moderately om ented, mon-malourous mandstone, light gray *0 0.2 8 39.4" to 41.6" gray, sandy 74.3 42.0' to 42.6' SAMESTORE, light gray, well occurred, calcarcous, with thin (0.01')

100000000000000000000000000000000000000	42.6° to 44.8° wazy, with
	42.6' to 44.8' waxy, with 44.7' to 44.8' a little softer
	softer
-	
-1	44.8' to 45.0' SILTSTORE,
	well comented, light gray
	45.0° to 48.3° waxy
	45.3° to 45.5° tight lew angle joint
	angle joint
	45.7° a little softer
-	46 11 4- 46 21
-	46.1 to 46.2 small lens of light brown chart
-	47.7° to 48.1° tight, low angle joint, with 1°
77.22.2	low angle joint, with 1
	displacement
	48.1" to 48.2" a little
	anftar
	48.5° to 57.8° with very mum-
	48.3° to 57.8° with very mus- erous elongate lenses and beds
	of light gray moderately to
-	of light gray moderately to well occented mandatone and obert
	ohers
-	50.5' to 50.4' SANDSTONE,
-	light gray, well comented
7	
7	54.5' to 54.8'; 55.1' to 55.4'; 55.8' to 55.9'; 56.0' to 56.3'; SAMENTONE, 11tht gray, sod- erately counted
7	55.8' to 55.9'; 56.0' to 56.3';
7	Samprine, 11tht gray, sod-
-	erasery centented
=	56.3' to 56.4' chert, light
7	brown, hard
┪	
#	56.4' to 57.8' CAMBOTONE, gray, moderately well operated.
_	gray, moderately well openited, thin-bodded, calcarous to 57.7; 57.7 to 57.8; pen calcareous, with an open
d I	thin-bodded, calcarcous to
=	or or i of the or once
	low angle joint
7	
7 1	57.8° to 70.7° waxy
7 1	
7	60.7' to 60.9' SAMDSTONE, moderately penented, orese-
	bodded oresented
7	
7	60.9' to 61.5' with numerous
7	60.9' to 61.5' with numerous elongate lenses of sandstone
7	
7	
7 1	
7	62,2' to 62.5' tight
7	45° joint
7	62.4' to 62.6' obert,
7 1	light house, hard, also
= !	61,11 to 61,21: 65,71 to
=	light brown, hard, also 61.1' to 61.2'; 65.7' to 65.8'; 68.1' to 68.3'
-d	
=	69.2' to 69.5' SANDSTONE,
_	light gray, noorly cemented
=	69.7' to 69.9' SANDOTONE,
=	poorly comented, calcarpous
<u> </u>	
=	70.7' to 74.3' gray, sightly camented, calcareous, with
_	Demonted, calcareous, with
H	very muserous liny streaks, moderately hard
3 I	
<u>-</u>	74.5' to 101.0' gray, octcareous,
3 I	as above
3 I	
3	
ㅋ !	1 1 1
⊣ 1	

Main No. 816C-44 The District	40.1' to 40.2' small lens of light brown chief 47.7' to 48.1' tight, low angle joint, with 1' displacement 48.1' to 48.2' a little softer 48.3' to 57.8' with very maserous elongate lenses and bods of light gray moderately of the second consented and the second consented and the second consented and the second consented and the second consented and the second consented and the second consented and the second consented and the second consented and the second consented and the second consented consent
62.6 66.7 7 70.5 8 79.3 T. D. 6" sore 0 74.5"	RECORD DRAWING-WORK AS BUILT STRING NO. ACTION DAYE DESCRIPTION OF REVISION U.S. ARMY ENGINEER DISTRICT, FORT WORTH CORPS OF ENGINEERS FORT WORTH, TEXAS AQUILLA LAKE AQUILLA CREEK, TEXAS DRAWN BY: EMBANKMENT AND SPILLWAY CHECKED BY: LOGS OF BORINGS BAGDC-42, 6DC-43 AND BAGC-44 SUBMITTED BY: INV. NO. DACMGS-60-8-0086 DATED: AUG. 1980 CONTR. NO. DACMGS-60-8-0086 DATED: AUG. 1980 ONTR. NO. DACMGS-60-8-0086 DATED: AUG. 1980 DRAWING NUMBER SWEET NO. B-200F 12.5

	DIVISION	TIMSTAL LATION		Hole No. 67/C-15			
DRILLING LOG	Contimestern		South B	strict or 3 sweets			
Aguille DEStide Commission or S	telland	N. SIZE AND TYPE OF SIT 4 SI DATOM FOR SEEVATION SHOWN (TEM WISE)					
Cor. : of Enginee	ro .	12. MANUFACTURER'S DESIGNATION OF DRILL Thill c 1500 13 TOTAL NO. OF OVER. DESTURBED UNDESTURBED SUNDER SAMPLES TAKEN DESTURBED OF OVER SUNDER SAMPLES TAKEN OF OVER OF OVER SUNDER SAMPLES TAKEN OF OVER OF OVER SUNDER SAMPLES TAKEN OF OVER OF OVER OF OVER SUNDER SAMPLES TAKEN OF OVER OF OVER OF OVER SUNDER SAMPLES TAKEN OF OVER OF OVER OF OVER OF OVER OF OVER OVER OVER					
HOLF HO (4 a answer om dage and his respected And Or Daill TR	600-45	TOTAL HO.					
PECTER OF HOLE		IL ELEVATION	CHOUND W.	ATEN 40			
2) VERTICA				tay 75 9 "av 75			
PEPTH ONILLED INTO ROC		TIM TOTAL FOR	# SECONTS	v ron monue 100 . (in writing			
STAL SEPTH OF HOLE	111-01	ALS PECO	10 ()	NEMANKS NEMANKS			
5 -	(Description)	RECO	1	(Delling ima, upon hea, depth of meathering, air, it eignificant)			
1 3	0.0° to 17.6°		Jar	*Drilling			
	CI.AY		Can				
1 3	0.0' to 3.0' loz	plantic ty,	1	0.0' to 2.0' 8" sugger 2.0' to 38.5' 6" D Eb 38.5' to 83.1' 6" cor 0.0' to 111.0' 3" fla			
1 3	gratish-brown, sti	ff, roist,	2	0.0' to 111.0' 3" fin			
=	3.0' to 5.0' become to very stiff	es stiff	3	Jar mundes			
1 = 3				A. 0.0' to 2.0'			
10 =	5.0' to 11.0' low tan, stiff to very moist, with small	stiff,	4	B. 4.0' 1.5 C. 6.0' 2.0			
	ules to 9.0"		5	B. 8.0' 2.0 E. 10.0' 3.5			
1-3	11.0' to 15.0' be	DO:: 8:0	1	P. 12.0' 3.5 G. 14.0' 3.5			
	15.0' to 17.6' be	20002	6	H. 16.0' 2.0 I. 18.0'			
	sendy		7	J. 19.0' E. 21.0'			
	17.6' to 30.0'		-	i. 23.0'			
	SARD		8	N. 27.0' O. 29.0'			
	17.6' to 18.5' tar dense, poist, very	Glaver	9	P. 31.0' Q. 33.0' 2.0			
	18,5° to 22,0° bed		10	R. 34.51 2.25 S. 36.51 2.25 T. 38.51			
	slightly clayey		li li	T. 38.51 Note: Column 2 is a			
	22.0' to 24.0' bro moist, redium-grain	ed, with	"	tabulation of hand penetroneter readings			
1=	sono dark minerals	1	は	Donison samples			
1 3	24.0° to 28.0° tar noist, very fine	, 10083,	13	1. 2.01 to 4.01			
Trinina.		wa. loose.	13	2. 4.0° to 6.0° 3. 6.0° to 8.0°			
=	28.0° t 30.0° bro noist, nodium-grain sous dark sinerals	ned, with	14	4. 8.0' to 10.0' 5. 10.0' to 12.0'			
	30.0' to 36.5'		15	4. 8.0' to 10.0' 5. 10.0' to 12.0' 6. 12.0' to 14.0' 7. 14.0' 0. 16.0' 8. 16.0' to 18.3' 9. 18.0' to 19.0' 10. 19. ' to 21.0' 11. 21.0' to 23.0' 12. 23.0' to 25.0' 13. 25.0' to 27.0' 14. 27.0' to 29.0'			
	Ci.AY		,,,	8. 16.0' to 18.3'			
7		ation.	16	10. 19. ' to 21.0'			
	low pl: aticity, tar very coist, very s: with more pockets of	ndy,	17	12. 23.0' to 25.0'			
1	tan and gray at 35.	becomes		46 40 41 - 41 -			
	36.51 to 38.21		18	15. 29.0° to 31.0° 16. 31.0° to 33.0° 17. 35.0° to 34.5° 18. 34.5° to 36.5°			
	SAND		17	18. 34.5' to 36.5'			
	li ht broms, loose,	.78.		19. 30.5 07 30.5			
→ ***	20300,	attarated,	-	•			
=====	fine to medium grai	ned	0-	Corton sc.ples			
1 3	38.2' to 41.0'		Box 1	1. 41.5' to 42.2'			
=	CHAVEL			2. 55.01 to 55.91 3. 67.51 to 68.41 4. 76.51 to 77.41			
1 =	loose, tan, satural	ed,		5. 81.5° to 82.4°			
	41.0' to 42.5'		47.0	** Pater level			
1 4X	SAND			Four inch plastic pipe			
50	ton and may nedig	7 40.40		53.01 to 53.01, and bac			
	tan and gray, mediu very moist, clayey, very clayer at base	becoming	2	filled with pen gravel to 15.01. Pipe was			
	42.5' to 45.6'		1 1	buried with scrap seto for future use. Hole			
	C AY			was making mater from 36.5' to 52.7'.			
====		J, very					
1 3 :	noist, sindy, 2.0 o	n pen-	57.0	0.0' to 52.9' or care			
1 4	45.6' to 52.7'			0.0' to 52.9' oalcare 52.9' to 79.1 non-cal			
[,]	SAND and GRAVEL		3	carcous, except well cerented sandstone lenses			
60 —	45.6' to 46.6' nos	tly granul		79.1' to 80.9' mostly			
	no recovery		G1.7	80.9' to 82.4' calcur			
	46.6° to 47.0° SAH medium dense, very	D. proy.	4	Prinary is unreathered 32-45 was drilled 9.0			
	arayay		1	of 6DC-45 for purpose of geophysical logging			
13/2	47.0' to 52.7' mos and cobbles to 4";	tly gravel	66.2	and drill action below			
主選	little recovery			82.4'			
	52.7' to 53.1'		5				
70 -	SANDSYOWE						
	52.7' to 52.9' light wall comented, calcu	at erry,	71.0	<u> </u>			
	52.9' to 53.1' CLA		6	F			
크 : []	STORE, 11,5t brown,	h: rd		Ē			
	53.1° to 82.4°		75.7	E			
37	Salad.E			1			
3/1	53.1' to 57.8' dari	eathered,	7	E			
	non-calcurons, unw	Cras.	1 1				

1	18	
1 7 1	5/ 51 to 54 61 mlay-19mm	1
다 다입니다.	etone 122	4
1 2 5 3	83.1	
710	56.0° to 56.2° low angle.	
	tight, slickensided joint.	
1 4 1	which opens upon drying	1
3-279	57.8' to 70.3' dark gray,	
7.70	with mumerous lenses and	i
1 -11	beds of sandstone, calcareous	
	and mon-calcareous and clay-	
	ironstone nodules	
90 - 3	50 41 A- 50 CL - CC - AL	
7 9	58.4' to 58.6'; 65.9' to	
	66.0' olay-ironstone	
	59.1' to 59.2'; 59.3' to 59.5	
7.00	andstone	
3-2	P.3845 8446	
1 12	70.3' to 79.1' dark gray,	
1 1 1	Waxy	
1 -1 - 1		1
1 7 1	70.9' to 71.0'; 71:8' to 71.9	
34	a little softer	1
		1
J =	72.0' to 72.3' three low	
	angle, tig t, slickensided	1
100	joints, 0.1° apart, which	1
74.	open upon drying	
	78.2' to 78.4' SANDSTORE.	
0.00	light gray, fine-grained,	
	poorly camented, c leareous	
		i
一 . 選	78.4' to 79.1' with mones	1
17 1	slightly calcareous	j
		1
1 3 4	79.1' to 80.9' gray, noderately	1
1 3 1	h rd, slightly camented, with	1
1 - 1	munerous lisy streaks; sortly	
- 1 - 4 4 4 4	carcous, with somes non-cal-	1
1	var.com, sandy	
110-1	80.9' to 111.0' gray to greenish-	
1 7 7 7	gray, salenreous, moderately	T. D. 0 111.0° in shall
] = [hard, with occasional limy	1. 2. 2 111.0 IE MAL
1 7	strouts	
1 -1		1

12	8	
4.011	54.5' to 54.6' clay-imon-	
T 7 17 1	ntone I in 9	티
	83.1	
7.4 %	56.0° to 56.2' low andle.	1
	tight, slickensided joint.	1
1 1 1	which opens upon drying	
1 7 4	and open appear any and	
	57.8' to 70.3' dark gray.	
7-3	with numerous lenses and	1
1 4 7 4	beds of sandstone, calcadeous	1
1 -1	and mon-calcarsous and clay-	1
1 7 1	ironstone nodui ee	
1 = -	Trong tope modules	1
90	58.41 to 58.61: 65.91 to	i
4		1
	66.0' Blay-ironstons	1
-		i
7-4	59.1' to 59.2': 59.3' to 59.5	
- □ ~ · · · · · · · · · · · · · · · · · ·	aradatone	1
7 3		1
	70.3' to 79.1' dark gray,	1
1 7 1	Waxy	1
1 1 1	70.9' to 71.0'; 71:8' to 71.9	1
→ → →	a little softer	1
1	72.0' to 72.3' three low	
1 7 7	angle, tig t, slickensided	
100	joints, 0.1' apart, which	
100	open upon drying	
~ = =	78.2' to 78.4' SANDSTORE.	
	light gray, fine-grained,	l .
	poorly semented, c leaveous	i
- T		1
	78.4' to 79.1' with somes	
	slightly calcareous	1
7		1
	79.1' to 80.9' gray, coderately:	
	h rd, slightly calented, with	
1 7 1	muserous liny streaks; costly	
7 98	oalc reous, with somes non-cal-	1
1 1 1	carcous, sandy	1
1 1	on was, said	
110-	80.9' to 111.0' gray to greenish	
	gray and announ, moderately	
		T. D. @ 111.0' in shall
	hard, with eccasional limy	
1 7 1	REFOURE	

	LING LO	G O	Southwestern	METAL	ITION	th Di-	Hele No.	85-46 SMEET 1 OF 2 SMEETS	
Aquill				II. BAY	MID TYPE	OF BIT	8* auger: 5	fishtail	
		noo se Kee		IZ MANUFACTURER'S DESIGNATION OF DRILL					
Corps	of Engi	ncers		13. TOT	iling	1500	OISTURGED	1 UMBHOTUMBED	
		m drami	83-46					. 0	
MAME OF DRILLER BYCHOL					ATION E	TOWN TO	TER		
EVENTICAL CHECKINED					E HOLE	111	1 Lav 75	19 l'ay 75	
THICKNE	11 OF OVE	RBURDE		17. ELE	ATION TO	P OF HO	E 541.871		
-	4HL 180 M	то посл	2.5'	M. TOT	ATURE OF	POPE	OR BORNS		
TOTAL D	DEPTH OF		57.01	Dos	SA (B	BOX SER	REMA	AKS	
LEVATION	PEPTH	LEGEND	(Description)	-	BRY	BO.	(Drolling state, or	or hom, days of A nagarithment	
	=					Jar			
	E		0.0' to 15.5'			Α	bri11		
	=		CLAY			-	0.0' to 37.	0' 8" mager .0' 3" fish-	
	-		0.0" to 3.0" low to			В	tail	.0.). IIM	
]		plasticity, gray, ve stiff, silty	ry moi	t,	-	Jer san	m (a	
	=								
	=		3.0° to 6.5° medium gray, very stiff, ve	plast	city,		A. 0.0' to B. 5.0' to C. 6.5' to	6.51	
	=					C	C. 6.5' to D. 10.8' to E. 13.0' to	13.01	
	20 11 11 11 11 11 11 11 11 11 11 11 11 11		6.5' to 10.8' low p bm wm, very stiff, n several small line m	oist,	nith		E. 13.0' to	15.5*	
	3						F. 15.5' to G. 17.0' to H. 20.3' to I. 24.0' to	20.3	
	E		10.8 to13.0 low p tan, very stiff, moi occasional pockets o	lastic	ty,	D	H. 20.3' to	24.01	
	E		occasional pockets o	st, wi Coarb	naceou		J. 28.2' to K. 30.0' to I. 33.0' to	30.0	
	1 -3		MATERIAL			Ē	I. 33.0' to	34.51	
	=		13.01 to 15.51 becomes	065 VE	3		"Nater		
	=					F			
	=		15.51 to 20.31				to 34.5'.	water, 30.0 Pour inch e, slotted to 37.0°, wa 5° to 37.0°, akfilled wit	
	F		SAMD			G	plastic pip	e, slotted	
	Eml		15.5' to 17.0' brow	n. loo			met from 2.	5' to 37.0'.	
	1° =		15.5' to 17.0' brow moist, fine to medius clayer	a, ali	htly		poa gravel	to 10.0°.	
	13					H	Not		
	=		17.0° to 20.3° become to very clayer brown with some gray	at 19.	AeA.				
	1 -		brown with some gray			-	37-46 was d	rilled to	
	1 3		20.3' to 24.0'			I	6.0' T of 8	rilled to was offset. 4-46 at the sion, for pur ophysical	
	1 =		GAT			1	poses of ge	ophysical	
	1 3		low alandteles due						
	milimlimilim		low plasticity, tan gray, stiff, very mos	ist, v	ry	T	0.0' to 34.	51 calcaren	
	₩ =					,	oursons	.0' weather	
	" =		24.0' to 28.2'				34.5° to 37	.0' weather	
	1 3		SAMD			K			
	=		tan with some gray.	edium					
	-		tan with some gray, dense, very soist, v	ery cla	3.03	L.			
	1 3	٠ <u>-</u>	28.2' to 30.0'						
	1 =		CLAY						
	1 3			n. wa-					
			low plasticity, brom moist, stiff to very	stiff.					
	46		sandy and gravelly,	to 1"					
	1 3								
	1 =		30.0' to 33.0'						
	1 3		SAND						
	=		tan, loose, saturate	đ					
	=		33.0' to 34.5'						
	1 =								
	1 =		GRAVEL						
	=		well graded, tan, sai	turate					
	=								
	=		34.5' to 37.0'						
	-		SHALE						
	=		slightly weathered, ten, mon-calcareous	gray as	đ				
	=								
	=		T. D. 0 37.0' in shal	•					
	=								
	1 =					1			

DRILL	ING LO	XG _		Southwestern
	a			
Aquil:	(Courde	or	804	d tool
CORNE	AGENCY	dia-		
Corps HOLE NO.	(As also		•	of sets
HAME OF	DAILLER		-	8.1-47
Brewe	- OF HOL	2	_	
2 YERTH		145.44	460	DEG. PRO
-				
. TOTAL DE				
ELEVATION	DF 874		_	CLASSIFICATION OF
	berin.		-	(Descripes
	=			
	=			0.0' to 5.0'
	Ξ	1		CLAY
	Ξ			0.0' to 3.0' dark brown, v
	_=			
	=			3.0' to 4.0' brown, hard,
į	=			sandy and gro
	=			4.0° to 5.0°
	10-			brown, very s
	=		=	4.0° to 5.0° brown, very s be bedded, wi pockets of so
	_			like caterial
	=			5.0° t; 5.4°
			÷	LIMESTONE
i	3			
i	_			well cemented penetrate wit
- 1	3		3	
			-	5.4° to 18.0°
	=			SHALE
	20			STAY .
	=	: :		
	-			18.0° to 41.0°
	Ξ			SAMESTONE
			: 1	30.01 to 32.0
	Ξ			32.01 to 32.5
	=			
	Ξ			32.5' to 33.0
i	=		٠	
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	30 -			
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J	=			
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- 1	=		٠	
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	=			
	40 =	1 1 1	:1	T. D. O 41.0' is

			Male No. 01 45				
	rt for	th Din	Mele No. BS_46 SHEET SHEET OF 2 SHEETS				
	ort Porth District or 2 MECTS 22 AMO TYPE OF BY 8" BUTCE: 3" Fightfull ATOM FOR ECEVATION SHOWN TYPE - BELL						
Pa	iling	1500	DISTURBED UMBISTURBED				
OT	MEN SAMP		12 0				
AT		STA	1 10 1 10 1 10 1 10 1 10 10 10 10 10 10				
LE.	VATION TO	P OF HO	LE 541,871				
) T	17.73	OL	con the				
	AECOV.	SAMPLE BO.	REMARKS (Probling than, motor hose, shorth of months and not, of algorithms)				
		Ъr А	Brilline				
		_	0.0' to 37.0' 8" suger 0.0' to 121.0' 3" fish- tail				
iu oi	t,	В	tail				
at:	city,		A. 0.0' to 3.0' B. 3.0' to 6.5'				
at:	it	c	B. 3.0' to 6.5' C. 6.5' to 10.8'				
ia	ity,		A. 0.0' to 3.0' B. 3.0' to 6.5' C. 6.5' to 10.8' D. 10.8' to 13.0' S. 13.0' to 15.5' F. 15.5' to 17.0' G. 17.0' 3 20.3' H. 20.3' to 28.0' I. 24.0' to 28.2' J. 28.2' to 30.0' K. 30.0' to 33.0' J. 33.0' to 34.5'				
		D	G. 17.0' to 20.3' H. 20.3' to 24.0'				
ri rb	ty, h naceou	, "	I. 24.0' to 28.2' J. 28.2' to 30.0' K. 30.0' to 33.0'				
		E	L. 33.0' to 34.5'				
74	-	F	*Unter level				
		_	to 34.5'. Four inch				
~~		G	from 17.0' to 37.0', was met from 2.5' to 37.0'.				
11	e, htly		Hole making water, 30.0 to 34.5'. Your inch plastic pipe, slotted from 17.0' to 37.0', waset from 2.5' to 37.0'. Hole was backfilled witipes gravel to 10.0'.				
al.	yey,	н	Note				
3.1	•	_	3F-46 was drilled to 121.0' and was offset. 6.0' W of 8A-46 at the same elevation, for pur- poses of geophysical logging.				
		I	5.0' W of 8A-46 at the same elevation, for pur-				
	_		logging.				
*	гу	J	0.0° to 34.5° calcares: 34.5° to 37.0° mon-cal- margous 34.5° to 37.0° weather				
		h-	54.5' to 37.0' weather				
		K					
o I	200	L					
ff							
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to							
	đ						

		100	náión .	MSTALL			Piete Re.	BA-47	
	ING LO	G S	Sout:western			orth Di	ntwint	OF 1 SHEETS	
PROJECT				10. SIZE	AND TYPE	OF PIT	8" purcers 3"	fishtail	
Aqui)	(Cambo	nton or Stat					8" purer: 3"	1	
DRILLING		-					MATION OF DAILL		
Corps	of En	dineers		Talling 1500					
HOLE HO.	(As are	-	g maio!	BURE	EH SAMP	ES TARES	3	0	
HAME OF			8.1-47			R CORE DO	oxes 0		
Breze				IL ELEV	ATION G	OUND WAT			
DIRECTIO	H OF HOL	. E	DE4. FROM YERT.	M. DATE	HOLE	1874		15 Apr 75	
				17. ELEY	ATION TO	P OF HDL	586.921	1) Apr. 1)	
THICKNES			2.0.	14. TOT/	L CORE P	ECOVERY	FOR BORING	3	
DEPTH DE			36.0'	19. SIGN	TUSE OF	INSPECTO	× 11_		
. TOTAL D									
ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIA	LS'	S CORE	BOX OR SAMPLE MG.	(Delling time, well	or loam, depth of If digrifficant)	
	-		•		•	Jur			
	3	1	0.0' to 5.0'			A	Dril:	ling	
]		A.A. 10 3.0.						
	Ι Ξ		CLAY				0.0' to 5.1	0 8 auger	
	_	1				В	nefusal a	at 5.0' .0' 3" fish	
	=		0.0' to 3.0' low pl	astici	ty,	C	tail	, 1180	
	=	T	dark brown, very sti	If, oc	ist				
			3.01 to 4.01 low n	antin	tv.		Jar su	np!es	
	=		3.0' to 4.0' low pl brown, hard, soist,	alight	ly		A. 0.0' to	3.01	
			mandy and gravelly				B. 3.0' to	4.01	
	=		4.0° to 5.0° become				C. 4.0' to	5.0'	
	_ =		brown, very stiff,	DDes.	to				
	10-		be bedded, with wern	DURCE	ous		"Vater	level	
	=		be bedded, with very pockets of soft, ou	iche-					
			like caterial				Hole dry a	t completion	
	=		E 01 4. 5 41				of augering	r. 24 hour	
	=		5.0° t; 5.4°			! I	check - dr	y -	
	=		J.IMESTONE				No	te	
	=					i I		_	
			well cenented, could	not				o non cal-	
	7		pemetrate with sugar				Careous		
	=		5.4' to 18.0'				5.41 to 41	d' calcareo	
	_	• • • •					Careous	inon Gar	
	1		SHAJ.E					irilled 8.0'	
. 1	20-	1.3.1					F of BASC	7 for purpo	
/ 4	=		CN				of geophym	ical locaing	
	=	10.1	18.0' to 41.0'	- 1			Jog is best	ed on cattin	
	-			- 1			and drill a	action below	
	=		SANDSTONE	- 1			5.01.		
	-		30.0' to 32.0' SHAI	, 1		1			
	=		30.0' to 32.0' SHAI						
	=		32.0' to 32.5' well	COCIO	ted				
	-								
	1 3		32.5' to 35.0' SHAL	E					
	-								
	=			- 1		l i			
	30								
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YM DO NO. ACTION	DATE	DESCRIPTION OF RE	EVISION				
U.S. AR		BINEER DISTRICT, FO DRPS OF ENGINEERS FORT WORTH, TEXAS	RT WORTH	4			
DESIGNED BY:		AQUILLA LAKE					
DRAWH BY:	EMBANKMENT AND SPILLWAY LOGS OF BORINGS 6DC-45, 8A-46 AND 47						
CHECKED BY:							
SUBMITTED BY:		INV. NO. DACWG3-80-	B-0085 DATED: A	UG 196			
		CONTR. NO. DACINGS	-81-0035	SEQUE			
EMBINEEN:		DRAWING NUMBER	SHEET NO.	12			

CHILLING LOG	Southwestern	Port		
Amilier Efferen Condago orde		II. DAYLE FO	TYPE OF BLE	strict or2 seers 6 core; 3 f. htall
				GRATION OF DRILL
Control of Symmeon Section of Symmeon section of the section when sections are	S	BURDEN S	OF OVER	OFFURED UNDETURNET
PORTH SHELER	DAGC-48	IS ELEVATIO		exti 7
IE control of Controller	DES FROM YEST	M. DATE HOL		Apr 75 11 Apr 75
* PH.KIN:55 UF O'TRBURGE	n 5,7°	17 ELEVATIO	M IDF OF HO	cr 595.84
CAPTA IDV. C.O INTO HOCK	55.3"	TOTAL CO	OF INSPECT	V FOR BORING 97'. 1
10 14 10 10 10 10 10 10 10 10 10 10 10 10 10	61,0° CLABSIFICATION OF MATERI	ALS PEC	ME BOX OF	BEMARKS (Delling time, space ince, depth of residencing orc., it significant
- h			Jar	Total and the state of the stat
= =	0.0° to 5.7°		A	Drilling
	CLAY		8	0.0° to 6.0° B" auger
-=	0.0° to 1.5° low p brown, stiff, moist	lasticity,	. e	0.0° to 6.0° B" auger 6.0° to 41.0° 6° core 0.0° to 61.0' 3° fish-
3	slightly sandy	, mile and		tail
	1.5° to 3.0° become slightly moist, gra	es hard,	Box	Jar samples
	3.0° to 5.7° low p		1	A. 0.0' to 1.5' B. 1.5' to 3.0' C. 3.0' t. 5.7' D. 5.7' to 6.0'
10-	ixgra om wn, nard,	moist,	e	D. 5.7' to 6.0'
	sandy, with numerou line modules and sa of soft, calidae-li	all pockets	11 6	Carton samples
	5.7' to 13.6'	100		1. 7.3' to 8.2' 2. 24.7' to 25.6' 3. 37.8' to 38.7'
	SHALE	14.	0 2	3. 37.8' to 38.7'
		t gray		"Tater level
	tan, with some light weathered, thin-bed to break along bedd	ded, tends	6.2	At completion of corin
	with occasional ver	y thin		38.0'. On 15 april.
14%	beds of siltatone as	nd fine G		water level was 15.0'.
30 -				Note
	9.6' to 9.8';:10.8' 11.1' to 11.3'; 3.12 light brownish-gray	DOME 22	0 21.7	0.0' to 14.7' calcare: 14.7' to 61.0' non cal
	erately desented	L		5.7' to 23.7' weather
	11.6° to 13.6° beo predominately tan	oces O.	4	3F-48 was drilled 8.01 E of 8A6C-48 for the
	13.61 to 14.71	26	0	purpose of geophysical logging. Geologic lo
	LIPESTONE	6	4 274	is based on information gathered from both hole
	light gray and ligh weathered, moderate		0	and based on cuttings
xo —	weathered, moderate well cemented	L	5	and drill action only from 40.8' to 61.0'
1 = -	14.1" to 14.2" SHA	LE	4	
	14.7' to 28.9'	33	0 32.7	
1 = -	SHALE			
1 1		L		
1 ±×	14.7° to 20.9° wea	1 /./	6	
	14.7° to 20.9° wea light gray to gray, bedded, with very n	thered.	ľ	
====	elongate lenses and gray, yellow, and r	thered thin- beds of	0	
311	elongate lenses and	thered thin-	0	
3	elongate lenses and gray, yellow, and r brown saudatone	thered thin-	2 36.7	
1	elongate lenses and gray, yellow, and r brown sandatone	thered thin 37. Decree of L column Co.	2 36.7	
3	elongate lenses and gray, yellow, and r brown sandstone 16.2' to 17.0' Si light brown, moder cesented, with occ shale purtiage, al	thered thin 37. macrous beds of coddish 0. unstone, rately resions.	2 36.7	
1	bedded, with very melourate lemmes and gray, yellow, and r brown sandatone 16.2° to 17.0° Si light brown, moder counted, with our shale partings, all calcarcous	thered time 37. beds of L columns of L colum	2 36.7	
3	seatons, with very melograte lemmes and gray, yellow, and re brown satisfactors. 16.2' to 17.0' Si light brown, moder counted, with soc shale partings, all calcureous 20.5' to 20.8' Si light brown, poor!	thered thin- merous 37. beds of L eddish O. MINSTONE, rately maional lightly ustornes, ly commended	0 2 36.7 2 40.8	
1	seatons, with very melograte lemmes and gray, yellow, and re brown satisfactors. 16.2' to 17.0' Si light brown, moder counted, with soc shale partings, all calcureous 20.5' to 20.8' Si light brown, poor!	thered thin- merous 37. beds of L eddish O. MINSTONE, rately maional lightly ustornes, ly commended	0 2 36.7 2 40.8	
40	peaced, with very melourable lenses and gray, yellow, and r brown sandatone 16.2' to 17.0' Si light brown, moder counted, with our shale partings, aleaneous 20.5' to 20.8' Si	thered timesons 37. beds of coddish- o. MINISTORE, rately makional lightly MINISTORE, rately ministores, r	0 2 36.7 2 40.8	
3	seated, with very melorate lemmas and gray, yellow, and representations of the presentation of the seatest sea	thored trin- thin-	0 2 36.7 2 40.8	
40	seated, with very n elocyte lenses and gray, yellow, and r brown autonome life. 2' to 17.0' Si light brown, moder cesanted, with occasined partings, all calcurous 20.5' to 20.8' Si light brown, poor; 20.9' to 23.7' slight brown, poor; and strong and str	thored trian- 32. Decision of 1. In the second of 1.	0 2 36.7 2 40.8	
40	seatons, with very melography of the prown sandstone brown saddstone on the partings, all light brown, modes on the partings, all calcurous 20.5' to 20.8' St light brown, poorly 20.9' to 23.7' slight brown, poorly of the partings, all calcurous 20.5' to 20.8' St light brown, poorly of the partings of	thored trianger of the second trianger of the second trianger of the second trianger of the second trianger of tri	2 36.7 , , , , , , , , , , , , , , , , , , ,	
40	seated, with very n elocyte lenses and gray, yellow, and r brown autonome life. 2' to 17.0' Si light brown, moder cesanted, with occasined partings, all calcurous 20.5' to 20.8' Si light brown, poor; 20.9' to 23.7' slight brown, poor; and strong and str	thorad tish- was one of L oddish codd	2 36.7 , , , , , , , , , , , , , , , , , , ,	
40	seates, with very melography of the province o	thored tithe segment of the segment	2 36.7 , , , , , , , , , , , , , , , , , , ,	
40	sended, with very n elocate lenses and gray, yellow, and r brown andahone 16.2' to 17.0' Si light brown, model command, with one shale partings, all calcurous 20.5' to 20.8' Si light brown, poor! 20.9' to 25.7' sight brown, poorly dark gray, with lense yeary thin rust color monderione. 25.7' to 26.9' unset gray, phorly comment to consistent thin bed gray, poorly comment 27.4' to 27.7' to 27.7' to 27.7' sight for the consistent thin bed gray, poorly comment 27.4' to 27.7' to 27.7' sight for the consistent thin bed gray, poorly comment 27.4' to 27.7' to 27.7' sight for the consistent thin bed gray, poorly comment and thin bed gray, poorly comment and the consistent thin the consistent that the consistent than the con	thored tithe segment of the segment	2 36.7 , , , , , , , , , , , , , , , , , , ,	
40	sedded, with very n elocate lenses and gray, yellow, and r brown and the prown and the prown and the prown and the prown and the prown and the prown and the postings, all calcureous 20.9° to 20.8° 3. light brown, poorly 20.9° to 20.8° and the prown and the prown and the prown that gray, the provider gray, the provider gray, poorly cases to 27.4° to 27.7° 5. light gray, poorly 28.2° to 28.9° we with meserous poorly with meserous poorly with meserous poorly with meserous poorly seems that the provider gray poorly the provider gray poorly with meserous poorly the provider gray poorly with meserous poorly the provider gray poorly the	thored tithe segment of the segment	2 36.7 , , , , , , , , , , , , , , , , , , ,	
40	seated, with very melograte lenses and gray, yellow, and r brown saudatone life. 2' to 17.0' Si light brown, modes occurred, with consultation partiage, all calcurous 20.5' to 20.8' Si light brown, poorly 20.9' to 23.7' slight brown, poorly adark gray, with less very thin-bed occusional thin bed gray, poorly ossente 27.4' to 27.7' Si light gray, poorly with meserous pool sends tone 28.9' to 28.9' with numerous pool sends tone 28.9' to 56.0' SANDOTONE	thered tish- wearens are a second about the second about the second according to the second according	2 36.7 , , , , , , , , , , , , , , , , , , ,	
50-	seated, with very melograte lenses and gray, yellow, and r brown saudatone life. 2' to 17.0' Si light brown, modes occurred, with consultation partiage, all calcurous 20.5' to 20.8' Si light brown, poorly 20.9' to 23.7' slight brown, poorly adark gray, with less very thin-bed occusional thin bed gray, poorly ossente 27.4' to 27.7' Si light gray, poorly with meserous pool sends tone 28.9' to 28.9' with numerous pool sends tone 28.9' to 56.0' SANDOTONE	thered tish- wearens are a second about the second about the second according to the second according	2 36.7 , , , , , , , , , , , , , , , , , , ,	
50	seated, with very melorate lemses and fray, yellow, and representations of the following states of the	thered tish- wearens are a second about the second about the second according to the second according	2 36.7 , , , , , , , , , , , , , , , , , , ,	
50	seated, with very melography of the lenses and gray, yellow, and representations of the prosent state of the partiage, all light brown, model occasionated, with our shale partiage, all calcureous 20.5' to 20.8' St light brown, poorly 20.9' to 23.7' slight gray, with less very thin rust color sandartons 25.7' to 26.9' unsudant gray, thin-bedd occasional thin bedd occasional thin bedd occasional thin bedd occasional thin bedd occasional thin bedd occasional thin bedd occasional thin bedd occasional thin bedd occasional thin beddingray, poorly 28.2' to 28.9' with meserous pool sandartons 28.9' to 36.0' SANDOTONE light gray, poorly out the meserous thin 1 partiage of shale of shale of shale of the partiage of shale of the province of shale of the province of shale of the province of shale of the province of shale of the province of shale of the province of shale of the province of shale of the partiage of shale of the province of the partiage of shale of the province of the partiage of shale of the province of the partiage of shale of the province of the partiage of shale of the province of the partiage of shale of the province of the partiage of shale of the province of the partiage of shale of the province of the partiage of	thered tish- process of the tish- process of the tish- process of the tish- process of the tish- process of	2 36.7 7 7 40.9 40.9 40.9 40.9 40.9 40.9 40.9 40.9	
50	seated, with very melograte lemma and gray, yellow, and rebrown andshope life. 2' to 17.0' Si light brown, moder commend, with oor shale partings, all calcarcous 20.5' to 20.8' Si light brown, poorly 20.9' to 23.7' slight brown, poorly cannot sand the parting and sark gray, with least very thin rust color and the parting and sark gray, thin-bedd gray, poorly cannot gray, poorly cannot gray, poorly cannot gray, poorly cannot gray to 28.2' to 28.9' with memorous pool sand tone 28.9' to 36.0' SAHDOTONE - light gray, poorly cut memorous thin judget gray, poorly cut memorous thin judget gray, poorly cut memorous thin judget gray, poorly cut memorous thin judget gray, poorly cut memorous thin judget gray, poorly cut memorous thin judget gray, poorly cut memorous thin judget gray, poorly cut memorous thin judget gray, poorly cut memorous thin judget gray po	thered tish- process of the tish- process of the tish- process of the tish- process of the tish- process of	2 36.7 7 7 40.9 40.9 40.9 40.9 40.9 40.9 40.9 40.9	
50	seated, with very melorizate lenses and gray, yellow, and representations of the prown and store the prown and store the prown and store the prown and store on the partings, all light brown, poorly 20.9' to 23.7' slight brown, poorly 20.9' to 23.7' slight prown year this must color and trin bed gray, porly oments gray, thin-bed gray, poorly oments 27.4' to 27.7' 53 light gray, poorly 28.2' to 28.9' with memory thin gray, poorly 28.2' to 28.9' with memory soul and true 28.9' to 36.0' SAIDOTONE - light gray, poorly of the memory thin partings of shale 33.7' to 36.0' very seamented to mon one	thered tish- process of the tish- process of the tish- process of the tish- process of the tish- process of	2 36.7 7 7 40.9 40.9 40.9 40.9 40.9 40.9 40.9 40.9	
\$0 \$0	seated, with very melography of the province o	thered tish- process of the tish- process of the tish- process of the tish- process of the tish- process of	2 36.7 7 7 40.9 40.9 40.9 40.9 40.9 40.9 40.9 40.9	
50	seated, with very melorical element and fray, yellow, and representations of the seatest seate	thered tish- granuscoust odd ab- odd a	2 36.7 7 7 40.9 40.9 40.9 40.9 40.9 40.9 40.9 40.9	
\$0 \$0	seated, with very melograte lenses and fray, yellow, and representations of the prosentation of the program and stay, yellow, and representation of the prosentation of the program of the process of the	thered tish- granuscoust odd ab- odd a	2 36.7 7 7 40.9 40.9 40.9 40.9 40.9 40.9 40.9 40.9	42.0' to 47.5'
90	seated, with very melograte lenses and fray, yellow, and representations of the prosentation of the prosen	thered tish- granuscoust odd ab- odd a	2 36.7 7 7 40.9 40.9 40.9 40.9 40.9 40.9 40.9 40.9	42.0' to 47.5' SANDOTONE
\$0 \$0	seated, with very melograte lenses and fray, yellow, and representations of the prosentation of the prosen	thered tish- gramman and tish- bods of coddish- O. WINDSTONE, which was the post of post of coddish- O. WINDSTONE, which was the coddish- O. WINDSTONE, which was the coddish- O. WINDSTONE, which was the coddish- coddish- o. WINDSTONE, which was the coddish- coddish- coddish- o. WINDSTONE, which coddish-	2 36.7 7 7 40.9 40.9 40.9 40.9 40.9 40.9 40.9 40.9	42.0' to 47.5' SANDOTONE 47.5' to 61.0'
\$0 \$0	seated, with very melograte lenses and fray, yellow, and representations of the prosentation of the prosen	thered tish- gramman and tish- gramman and tish- bods of odish-	2 36.7 7 7 40.9 40.9 40.9 40.9 40.9 40.9 40.9 40.9	42.0' to 47.5' SANDOTONE 47.5' to 61.0' SEALE
90	seated, with very metorical element and gray, yellow, and represented, with occaminations and advantage of the comment of the	thered tish- gramman and tish- gramman and tish- bods of odish-	2 36.7 7 7 40.9 40.9 40.9 40.9 40.9 40.9 40.9 40.9	42.0' to 47.5' SARDOTONE 47.5' to 61.0' SEALE 4ark gray
50	seated, with very melograte lenses and fray, yellow, and representations of the seatest seates	thered tish- gramman and tish- gramman and tish- bods of coddish-	2 36.7 7 7 40.9 40.9 40.9 40.9 40.9 40.9 40.9 40.9	SANDSTONE 47.5' to 61.0' SHALE

	ING LO	IG Di	Southwestern	PO		th Dist	Hole No. 8A65-4
MARKET				W. MZE	AND TYPE	OF BIT	6" opre: 3" fishtail
LECATION	E (Courde	Tri	·~				
BANK LINE				T.	iline 1	500	HATION OF BRILL
COTTO	of the	neers	ng sed e	13. 707	AL NO OF	DVER-	2 0
			BA6C-49	14. 707	AL HUMBE	R CORE M	OXES 3
Braver	0 P HO			-		OUND WA	
E) ****	EAL		DEQ. FROM VENT		E HOLE	_ 9	Apr 75 9 Apr 7
. THICKHES				16. TOT	AL CORE	ECOVERY	FOR BORNE BOX
DEPTH DE			30.0'	10 (100	ATURE OF	Office	CH_
		LEGEND	CLAMIFICATION OF MATER	AL	A CONT	BOIL OF	MEMARKS
					•	-	(Drifting than, owner lean, digit realforing, etc., if algorithms
	=					Jar A	
	-		0.0' to 5.5'				brilling
	=		CLAY			8	0.01 to 6.01 8" as
	-		0.0' to 2.0' lee p	lastici	ty.		6.0' to 20.5' 6" :
	=		0.01 to 2.01 lew p dark brown, vary at moist, slightly san	iff, si	ightly		tail
		2	scattered gravels	J, WA1	.00	c	lar samples
	=		2.0' to 5.5' becom	es bron	L a	Box	A. 0.01 to 2.01
	=		ish gray, dry to si	ightly	0.0	1	8. 2.0' to 5.5' C. 5.5' to 6.0'
	10-	1	moist, hard		100		C. 3.5. 10 6.0
	10 =		5.5' to 6.6'			li	Carton samples
	=		SANDSTONE		03	18.1	1. 8.8' to 9.7'
	=	122	ian, weathered, fin	o-grain			1. 8.8' to 9.7' 2. 13.5' to 14.3' 3. 19.6' to 20.4'
		2	clayer, poorly come thin mones of shale	rited, 1	145	2	
	=	37					"Tater level
	-	=	6.6' to 12.8'		L 0.4	170	Boring bailed to 19 24 hour check - 8.0
	=	===	SHALE			1.0	
	=	X	6.6' to 10.2' gray	, with	18.5	3	Note
	20	3 =	rist along bedding sandy, with thin be		10.6		All samples are not calcareous, and on
	~	3)	lenses of gray and sandstone	rust	205	-	hole was weathered
							T. D. 3F-49 was o
	=		7.0' to 7.2'; 10. SANDSTONE, gray,	poorly	0.2';		purposes of geophy
	_		cemented				from outtings and
	Ξ	-	10.2' to 12.4' bed	omes no	D		action from 20.5'
	-3	;: T	sandy				,
	=		12.41 to 12.81 bed	oned se	ndy		
	-		12.8' to 30.0'				
	30		SAMPSTONE				
	~]	
	=		brown to light brown cemented, with occa	sional	thin		
			cemented, with occa beds of shale. Bad drilling with some	ly brok	en in		
	ا آ		18.1' to 19.1'.				
	=		12.8' to 13.3' and	erately	-	ed,	
	1 -		yellowish-brown and	red			
	=		25.0' to 28.0' SEA	l.E. das	-		
	=		20.5' to 29.0' SEA	LE, das			
	=			,			
	140	,			1	1	

				Role I	BABU-44
BRILLING LOG	Southwestern	Pert Tor	h N =+	wi nt	
PREJECT	- COLUMNIA	S. SIZE AND TYPE			
Aquilla		TI. BAYUM FOR EL	HOLTAVE	SHOWN TYPE -	-
LOCATION (Constances or S	(atten)	15. MANUFACTURE	- 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1		
SAN, LING AGENCY		Failing 1			
Carps of Engineer	the state	12. YOTAL NO. OF	OVER		UHBI 5 TUM 04 9
	846C-49			1 2	0
HANE OF DRILLER		IL TOTAL HUMBE	H CORE I		
Bengarion of House				1110	1000,010
E VERTICAL MICLIME	D DES. FROM YEST.	IS. BATE HOLE		Apr 75	9 Apr 75
THICRHESS OF OVERBURDS	EN 5,51	IP. ELEVATION TO			
DEPTH DRILLED MYO ROC		M. TOTAL CORE	ECOVERY	FOR BORNING	894
TOTAL DEPTH OF HOLE	30,01	Chrosel ?	770	THE.	
LEVATION DEPTH LEGENT	Y		90x on		IMARK\$
	(Decorposad)	water.	100	(Drifting time	white from depth of
	· · · · · ·	+ •	Jar		_
1 ±			A		
1 =	0.0' to 5.5'			la constant	lline
	CLAY			0.01 4-	6 A1 B4
1 =	mm1	1	8	6.0' to	6.0' 8" suger 20.5' 6" core
1 =	0.0' to 2.0' lew pl	asticity,		0.0' to	50.0° 3° fist
1 =	dark brown, very sti	ff, shightly		tail	
	moist, slightly sand	y. 1106.0	c		
				ALC:	SAMP) OF
	2.0' to 5.5' become	e promote	Box	A. 0.01	to 2.01
-	180 gray, ary to \$11	ghtly	1	B. 2.0' C. 5.5'	to 5.51
1 71	moist, hard		1	C. 5.5"	to 6.01
10	5.5' to 6.6'	100			
1	=		i	Carto	n garaples
4-11	SANDSTONE	6	19.1		
		0.3		2 13 51	to 9.7'
1 -1	tan, weathered, fine	-grained,	1	3. 19.6	to 9.7' to 14.3' to 20.4'
-2		rted, wath	2		
7 =	MIN SOURS OF SURTA		i I	"Tat	er level
1 3 3	6.6' to 12.8'	L			45 44 40 00
		0.4	17.0	morang a	ailed to 19.0° oheck - 8.0°.
3	SHALE		1		oniecz - D.O .
	6.6' to 10.2' gray,	with 18.5	3		lote
20 3 =	mandy, with thin bed	IS AND		all sump	les are non- us, and core
1 +		ust NOS	\vdash		weathered the
= -	sandstone			T. D. 3	F-49 Was office
1 7	7.0' to 7.2'; 10.0	to 10.2'1			f BA6C-49 for
1 1 1 1 1 1	SANDSTONE, gray, 1	corly .	1	purposes	of geophysics
1 -	cemented			from out	Hole was log tings and dril
1 =	10.2' to 12.4' been		1	action f	rom 20.5° to
	sandy sendy	-		30.01.	
	12.4° to 12.8° bear	mes sandy			
	12.8' to 30.0'				
30	SANDOTONE				
	brown to light brown	, poorly			
	cemented, with occas	thin			
1 1	beds of shale. Badd drilling with some of	y broken in			
	18.1' to 19.1'.	ore loss from	7 I		
=			!!		
=	12.8' to 15.3' mode	rately semen	ed,		
	yellowish-brown and	red			
	25 01 44 20 01				
	25.0' to 28.0' SHAI	E, 421K gray	1		
s multuulum	28.51 to 29.01 SEAL	E. dark grav			
40	•	ı			

				MSTALL	1 1 2 2 2 2		Hale No. 8A-50	,
ORILI	LINES E.C	× -	Southwestern			h Diat	t-ict or inters 8° auger; 3° (inhtai)	
Agril)				TR. BATE	H 700 CT	EVATION	8, wides: 3, 17202711	1
	AGENCY						GHATING OF DRILL	1
Corps	of En	ineers		13. 707	iling 1	DYER-	H 4 0	1
	DAILLER		84-50		VATION C			j
Brews						ROUND W	NTER 0 COMPLETED	}
(X) VERT				M. BAY	VATION TO	1_1	5 Apr 75 : 15 Apr 75	-
7. THICKNES B. DEPTH O			6.0	10. 107	AL CORE	ECOVER	T FOR BORNES 5	1
A TOTAL D	EFTH OF	HOLE	55.0° 61.0°	Ox	NO.	02.0	J.E.	
ELEVATION	нерти	LEGEND	CLASSIFICATION OF MATERIA	LE	RECOV.	SAMPLE NO.	Deling the, main host, depth of medicing, etc., if algorithms	1
•	-		•			Jar	•	F
	=		0.0° to 6.0°			A	Drilling	F
	=		CLAY			В	0.01 to 13.51 8" suger	F
	=		0.0' to 2.0' low pl gray, stiff, moist,	estici	y.	C	refusal at 13.5' 0.0' to 61.0' 3" fish-	E
	=		gray, stiff, moist, sandy, slightly calc	alight	y	D	tail	F
	13						iar samples	E
	=		2.0° to 3.5° become hard, with occasions line nodules	l mal	-	E	A. 0.0' to 2.0'	F
	=							E
	10 -	`, ·	3.5 to 4.5 with m	t,			E. 6.0' to 10.5' E. 6.0' to 10.5' F. 10.5' to 13.5'	E
	=	7	caliche-like materia	7		F	P. 10.5' to 13.5'	E
	=	- 4	4.5' to 6.0' low pl redish-brown, very s sandy, moist, with t	estici	ty, very		*Tater level	F
	=		sandy, soist, with t	Taces	D£.	_		E
	=		bedding				at completion of auguring hole was dry, but began to communicate water from	E
	-		6.0' to 13.5'				fishtail hole.	E
	1 3		SHALE				Note	F
	-	AT FOR	6.0' to 10.5' gray weathered, thin-bedd	and te	p.		0.0' to 15.5' calcared 15.5' to 61.0' mon	-
	20 -						15.5' to 61.0' mon calcareous	E
	-		10.5° to 13.5° beco dominately tan, sand	A es br			50-50 was doilled 6.01	F
	3		13.5' to 15.5'				# of 64-50 for purposes of geophysical logging. From 13.5' to 61.0' log	E
	=		LIME TONE				From 13.5' to 61.0' log is based on outtings ar	E
	-			con ld			drill action.	F
	=		gray, well commented, not penetrate with a	nger;			15.5' to 16.5' taking water badly	F
	=		shaley from 14.5' to	15.0			27.5' to 29.0' lost	E
	-		15.5' to 26.5'				34.5' to 39.0' taking water gradually	E
	=		SMALE				same granuary	E
	30		gray to dark gray					F
	=		18.5' to 18.8' SAND	STONE				F
] =		26.5' to 36.0'					F
	-		SANDSTONE					E
	=		poorly omented					Ē
			29.0' to 29.5' wall		and .		`	E
	_			-				E
	:							E
	1							F
	1 3		36.0' to 39.0'					E
	=		SRALE					E
	1 3	1						E
	3	: :::	dark gray			1		E
	-		39.0' to 46.0'			1		E
	=		SANDSTONE					E
	1 =		39.0' to 40.0' well	l cene	ted			E
	50-		40.0' to 41.5'. SHA	.E				E
	=		45.0' to 46.0', her cemented, slightly	d, well	1	1		E
	-		commented, slightly	celoer	ous	l		F
	1 =		46.0' to 61.0'					E
	1 =		SHALE					E
	1 =		dark gray					E
	1 3		7. D. 0 61.0' in shall	•				E
	1 -							dentification of the second
	3	4						E
	60	A. In						E
	1 3	1						E
	3	1						E

RECORD DI	RAW
SYM D.O. NO. AC	TION
U.S.	
DESIGNED BY:	
DRAWN BY:	
CHECKED BY:	
SUBMITTED BY:	
ENGINEER:	

Southwestern	M. MIE	ME TYPE	th Din	B" super; 5" thathar.
	7			IGNATION OF BUILL
	Pai	iling	1500	
S .	19. TOTA	AL NO. 60	DVER-	EN 4 0
84- 50	14. 7074	AL HUMBE	R CORE	DOXES O
	IL ELEV	ATION B		
046. FROM VENT.	W. DATE		1.0	15 Apr 75 15 Apr 75
tu 6.0°	17. ELEV	ATION T	OF OF M	M.E. SOS A
55.01	16. TOTA	S S S S S S S S S S S S S S S S S S S	RECOVER	TOP I
61,0"	1 Qx	No. R	02.	35
CLASSIFICATION OF MATERI	ALE V	A CORE	BOX OR	REWARKS (Butting stee, ware less, depris of montholing, ste., if apprint and
		•	7	
			Jar	
0.0° to 6.0°			Α	Prilling
CLAY			8	0.0' to 13.5' 6" mirro
0.01 to 2.01 low o	antini		c	0.0' to 13.5' 8" sugge refusal at 13.5' 0.0' to 61.0' 3" find
0.0° to 2.0° low pi gray, stiff, moist, sandy, slightly cale	alight	7	D	0.0' to 61.0' 3" fint
sandy, slightly cale	Ser. som		U	
2.01 to 3.51 become	es brow	n,		Jar samples
hard, with occasion	al smal	-	E	A. 0.0' to 2.0'
1220 2222	- 1		,	A. 0.0' to 2.0' B. 2.0' to 3.5'
3.5° to 4.5° with a	merou			C. 3.5' to 4.5' D. 4.5' to 6.0' E. 6.0' to 10.5' P. 10.5' to 13.5'
small pookets of so	rt,			E. 6.0' to 10.5'
			F	P. 10.5' to 13.5'
4.5' to 6.0' low p	astici	ty,	Ι΄.	"Tater level
4.5' to 6.0' low pl redish-brown, very s sandy, moist, with	races	of		
bedding				hole was dry, but here
6.0' to 13.5'				At completion of angeri hole was dry, but began to communicate water fr
				fishtail hole.
SHALE				Note
6.0' to 10.5' gray	and te	n,		
weathered, thin-beds	led			0.0' to 15.5' calcare 15.5' to 61.0' mon
10,51 to 13.51 beer	W 88 D	-		calcareous
10.5' to 13.5' beck dominately tan, same	b			37-50 was drilled 6.0' E of 61-50 for purpose of geophysical logging From 13.5' to 61.0' lo
13.5' to 15.5'				of sembers col large
1				Prom 13.5' to 61.0' 10
LEE PONE				THE DEFRICT OUR CRITICINGS I
gray, wall comented,	could			drill action.
not penetrate with	TTRRIN			15.5' to 16.5' taking
shaley from 14.5' to	15.0			1 27.5' to 29.0' lost
15.5' to 26.5'				dirculation
SMALE	-			34.5' to 39.0' taking water gradually
gray to dark gray				
18.5' to 18.8' SAID	STORE			
26.5' to 36.0'	- 1			
SANDSPORK	1			
			ĺ	1
poorly securited				
29.0' to 29.5' well	Cemon	ted		
			L.	
36.01 to 39.01				
SHALE				
dark gray				
39.0' to 46.0'				
1.0				
SANDOTORE				
39.0' to 40.0' well	1 0000	tod		
40.0° to 41.5° SHA				
7010 W 4107 dila				
45.0° to 46.0°, her	d, well			
cemented, slightly	CELOSE	ous]
46.0' to 61.0'				
SHALE	1			
			1	
dark gray				
7. D. 0 61.0' in shall				
1				
45.0' to 46.0', har concented, slightly 46.0' to 61.0' SHALE - dark gray 7. D. 0 61.0' in shal	1			
	1			
	1	l		1
	i			

Y FINA	L FOU	NDATION	REPORT	PLATE					
ENGINEER:			DRAWING NUMBER	SHEET NO.	127				
			CONTR. NO DACHES	CONTR. NO DACHES-BI-C-0035					
SUBMITTED !	by:		INV. NO. DACH63-80	INV. NO. DACH63-80-8-0086 DATED : AUG. 1980					
		ε	3A6C-48, 49 AND 8	A-50					
CHECKED BY			LOGS OF BORIN	IGS					
		EME	BANKMENT AND S	PILLWAY					
DRAWN BY:					1				
		AS							
DESIGNED BY	:	•	AQUILLA LAKI						
	.S. ARN	CORP	EER DISTRICT, FO S OF ENGINEERS ORT WORTH, TEXAS	OR: WORT					
SYM DO NO.		DATE	DESCRIPTION OF		ADMIN 201-2				
	· · · · · · · · · · · · · · · · · · ·								

		Dav.	/rš+čm	MISTALL	MSRA		Hole No. 8.1-51			
CITEL	I.L > G LOG Southwestern				Port Forth District or 2 sectors to sectors					
K 1 75 6	1 amount	nove or Stat					MATION OF BRILL			
	***EY	ineers			Pailin	1500				
		incers	85-51	14. TOY	AL HUMBE	R CORE B	oxes 0			
				IS ELE	VATION 68	OWN BANC	72R			
		WC L 1968 B		16. SAT	VATION TO		Apr 75 3 Apr 75			
		ROURDEN TO ROCK		M 707	W COOK 8	ECOVERS	FOR BORING			
) L 3	DEPTH	HOLE	CLASSIFICATION OF MATERIA	L. Page	PL/X	() fin				
. !			(Passingellan) d		PECONE FCOME					
	Ξ					To-A	Deilling			
			0.0' to 5.5'			В				
] =						0.0' to 34.5' 8" super 0.0' to 80.0' 3" fish tail			
]		0.0° to 0.8° low pi dark brown, stiff, i slightly sandy with large cobbles of que	oist,		C	Jar semples			
	=		large cobbles of que	arts a	a	D	4 0 01 to 0 01			
	-3			lestin	++		3. 0.8' to 3.8' C. 3.8' to 5.5'			
			0.8° to 3.8° low p	tiff,	with		2. 8.5' to 0.5'			
	10-		slightly sandy and a numerous small pook seliche-like materia	ets of	soft,	E	7. 13.3' to 16.5'			
	-						H. 19.0' to 24.0' I. 24.0' to 27.0' J. 27.0' to 32.0'			
		Para a	3.8° to 5.5° become with clongate pooke calibbe-like natural	s of	oft,		J. 27.0' to 32.0' K. 32.0' to 34.5'			
	=		of bedding	_, -		F	"Nater level			
	-	2	5.5° to 12.5°							
] =		SHAUE			6	Hole making water below 14.0°. 24 hour check 12.2'.			
			5.5° to 8.5° weath slightly sendy, this becomes sandy at 6.	ered.	an,		**Offset			
	20-						Boring offset from tree			
] =		8.5° to 12.5° become harder to augur	265 8	ittle	Н	of terrace as shown on mosaic.			
	=		12.5' to 13.3'				Note			
	=	-	MINESTONE				NF-51 was drilled 8.0'			
			moderately remented	, ligh		Г	north of 84-51 to a de of 80.0' for the purpo			
	=		gray, no sample tak	80			of geophysical logging Geological log below			
	=		13.3' to 27.0'			_	54.5' is based on out- tings and ponetration			
	30-					1	rate. All sceples are calcarcous to 16.5'.			
	=		13.3' to 16.5' wear gray and ten, thin-	beddod			Base of weathering at 24.0°.			
	-	::::	very sandy, saking				QB'to3.8' probably			
	-		16.5° to 19.5° all, thered, predominant	ly gra		K	Q8'to 3.8' probably highly visithered, cak. Eagle Ford & halo. 3.8' to 5.5' interpreted			
	1 3		grained and in ma- pockets and leases,	DOGOS.	ne		as being weathered Eagle Food shale.			
	=	7	less sandy at base				0.71 Park			
		772	19.5° to 24.0° dark weathered simle with	k gray	US-		0.74.73.03			
	40	333	erous poc. cts of we	there	, tan					
	=		yellow brown sand							
	I		21.5' to 21.7' 8	MD3.0	E,					
	-		tam, poorly easen	ted						
	3		24.0' to 27.0' mandark gray, with man of poorly commented	enther erous	d,					
	=	霻		tray a	nds top	Î				
	-	¥	27.0' to 45.0'							
	50-		27.0° to 29.0° tem	. moft						
	1 3		poorly cerented, sa							
	=		erately comented, w	mos m	d- floul					
] =		to auger							
	=			-	elal					
	1 3		34.5' to 36.5' SHA							
	1 =	, E		rly os	mted					
	60 E	#	38.0° to 40,0° SEA							
	=		40.01 to 45.01 peop 45.01 to 80.01	rly ee	ented					
			SHALE							
	1		dark gray							
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DRILLING LOG	Spetterestern	P	ort for	th Die	Hele No. 8
Amillia Carton Common or Sur	.	1			S POPE 3 FA
Corne of Backness		7	dling	1500	MAYIM OF MALL
1.1 40. (A) dame in desire	846C-52	14. 797	12.0	cone u	oves 6
Action or HALE		16. ELE	VATION OF	187 A	STED COM
STREET OF OVERSURED	36.5°	17. ELE	VATION TO	P 07 HO	Apr 75 8
PTH SMILLED MTS NOCK STAL BEPTH OF HOLE	163.51	-	COME	acover.	on the
VATION DEPTH LEGEND	CLASSIFICATION OF DATES	4	A SOOR	POS CO	-
				Jara	
131	0.0° to ±6.5°			8	Beilli
	CLAY				0.0' to 6.0' 6.0' to 75.0' 0.0' to 70.0'
1 1 1	0.0' to 1.0' low p	Lastici	7.	c	0.0° to 70.0°
1	0.0' to 1.0' low p dark brown, stiff, : vary moist, silty, : tered gravels	rith se	-	6.0	Jan sempi
		actic	0.8	8ox	A. 0.0' to 1.
	1.0' to 4.0' low p light brown to tan, moint, mandy, with small line modules	very I	urr.	1	3. 1.0' to 4. C. 4.0' to 6.
10	small line mobiles		10.0 100 nity.		Carton ser
	tan and gray, very	plasti stiff,	mist,	12.3	1. 9.2' to 10 2. 14.6' to 3. 20.3' to
	4.0' to 26.5' lew tan and gray, very thin-bedded, with m of moft, caliche-li Note: lost 6.0' t	to ante	rial		4. 20.1' 10
	Note: lost 6.0' t 6.0' was elay and linestone	6.8'	14.0	2	5. 32.9° to
-27-33	± 6.5' to 11.3'		0.3		Water 1
	SHALE		19.0	17.7	of meering.
	weathered, tan, thi interbedded with th	n-bedd	60.3		to 34.0' at of coring. plastic pipe from 15.0' t
	beds very sandy			3	in core hole
	6.8' to 6.9' LIEE; erately omented, s	ross, andy.	aght	28,	and backfill
	prom		5.		check -8.0'.
	7.5' to 7.5' SANDS moderately commented	, very		4	0.0' to 14.3
1 1 5	CAFECUS		26.0	27 5	14.3' to 34.
] =],	8.6' to 8.8'; 9.0' SAMDSTONE, poorly o	caunte	tan		6.5' to 22.3' 22.3' to 25. 25.3' to 30.
20 = 3 5	11.3' to 14.0'		30.5	5	25.3' to 30. weathered 30.5' to 34.
3,≠	LE:ASTONE				1.0 to 4.0
1 4	11.3' to 11.7' lig brown, moderately t this-bedded, slight	o well	oenent	d, us	highly mea
3				33 9	6 shale.
	senty, pitted	0048 B	36.0	30.6	4.0' to 6.5
1 3	11.9' to 12.3' Sill with thin, liny str	LE, as	above,		8.10
3.2	12.3' to 13.2' 1ia	ht gra			
10	stained light bross	, roder	tely	-	
1 3	to well occurred, to focalliferous, with	ery al	mely		Base
					33-52 was dr of 8460-52 s
	13.2' to 13.6' Ele expenses this lines stringers	tone			elevation for
	13.6" to 14.0" lig mederately occurred thinly interteded	at gre			Descriptive on outlings action below
	thinly intertedied	with a	10		SOLICE SELON
	14.0' to 16.4'				
50	SAMBOROSE				
	pourly commented, we memorate, this beds of chale	and 1	-		
	14.0' to 14.3' tax				
	eal sersons				
	14.3' to 15.4' 114		1		
3245	15.4' to 15.9' Eller-i	rom e	nie to:	•	
60	15.9° to 16.4° 114	ht gra	1		
	16.4' to 25.3'				
	16.4° to 18.0° gr		1		
	bedied, intertedder) bade	-	+	
	elengate lemmes of and light gray som	rust,	ed.		
	16.9° to 17.0°; 18.0° SAMETONE		4		
	Mountain administration				
70	18.0° to 22.3° gradert gray at heat, with less mearous	y, bee	ning Select		
իում ունակա	22.3' to 25.3' we gray, with small, it leases of sand this maker downered	reath or	4, 40	1	
	lenses of sand this	irregel à ince			
=	25.31 to 25.41 -	M. 90 4			
1 4	25.5' to 25.4'; 24.1' SAME/FORE	Frey	1	1	
-	24.8' to 25.3'		1		

Den c	ING LO	e. or	value	MEVALE			Rate No. BASC-52	1
JECT			Southwestern	90. BHEC	art dor	th las	friot or } mextre 6" core: 3" firesteil	1
274		X-					MAYIGH OF BRICK	ŀ
-	of E	wil man	1 ·	Th. 107	Aller Aller	1500	_ and turning	ł
			846C-52	14. 191	AL HUMBE	H CORE I	ones 6	1
	C 100			M. BAT	VATION OF	Tank	- Table 1985	ł
		INDUNO C			YATI ON TO	P 07 HO		1
PTH 88	W.L.CO	178 ROCE	163.5"	10. TOT	AL CORE	RECOVER	ron somme 97% s	ł
	PTH OF	FERENCE	70.01 CLASSIFICATION OF MAYOMA	14/00	A COUR	POX OR	workte nemance	ł
					Account		-	Ļ
	=					JorA	Brilling	E
	7		0.0' to 16.5'			8		E
	=		CLAY				0.0' to 6.0' B" anger 6.0' to 75.0' 6" ears 0.0' to 70.0' 3" fish-	F
	Ξ		0.0' to 1.0' low pl dark brown, stiff, a very moist, silty, w	astici cist 1	۵.	C	ted1	E
	=	\simeq	very moist, silty, u tered gravels	ith so	l L	6.0	ier amplen	ŧ
	=		1.0' to 4.0' low pl	actied	0.8	8ох	A. 0.0' to 1.0' B. 1.0' to 4.0' C. 4.0' to 6.0'	Ē
	=		i.0' to 4.0' low pl light brown to tan, noist, sandy, with a small line modules	MALT S	arr,	1	C. 4.0' to 6.0'	Ė
	-						Carton seanles	ŧ
	=		tan and gray, very a	tiff,	olty,	13.3	1. 9.2' to 10.0' 2. 14.6' to 15.3' 3. 20.3' to 21.2'	E
	Ξ		of soft, caliche-lik	a mate	rial			ŧ
	=		4.0' to 26.5' lew tan and gray, very a thin-bedded, with ma of soft, calithe-lik Note: lost 6.0' to 6.0' was elay and limestone	6.8'	14.0	2	5. 32.9' to 33.9'	E
	-		± 6.5' to 11.3'		0.3		Tister land	E
	=		SHALE		15.0	17.7	Hole dry at completion of sugering, and bailed	E
	=				603		of sugering, and baile to 34.0° at completion of coring. Four inch	-
	20 <u> </u>		weathered, tan, thin interbodded with thi beds very sandy	n (0.0	••)	3	plastic pipe, slotted	Ė
	=			OH!	200		in more hale to \$5.00.	т
	=		6.8' to 6.9' LEEN erately commiss, so brown	ndy, 1	in:	281	and backfilled with pe gravel to 5.0°. 24 hos sheek -8.0°.	ŧ
	-3		7.3' to 7.5' SARDET	-	0.1		liote	E
	=		moderately cemented,		cal-	4		Ė
	-	5			26.0	27.5	0.0' to 14.3' calcareon 14.3' to 34.6' son-cal- careous	
	-		8.6' to 8.8'; 9.0' to SANDSTONE, poorly oc	mented	tan	-	6.5' to 22.3' weathers 22.3' to 25.3' susseath 25.3' to 30.5' slightly	\$
	30 <u> </u>	5-5	11.3' to 14.0'			_	weethered.	•
	-	5=	LEESTONE		30.5	5	30.5' to 34.6' soweath	Ē
1	=	5.	11.3' to 11.7' ligh brown, moderately to this-bedied, mlightl	t 250	0.2 ist-		1.0 to 4.0 probably	Ė
	3	, -	thin-bedied, slight	y foet	lifer	40	highly weathered, calcuraous Engle Ford 6 shale.	E
	-	3	il.7' to 11.9' meno sandy, pitted	D00 30	36.0	33 7	4.0 to 6.5 t interpret	Ē
							se being worthered Engle Ford shale.	Ē
	1	-	11.5' to 12.5' SEAL with this, limy stri	agers			S. M. Lucle	E
			12.3 to 13.2 light stained light brown,	t gray				Ē
	40 -		THE STORM	100014	1	-		Ē
	3		to well semented, we feemiliferway, with	my ali	chaly		Zela	Ė
			13.2' to 15.6' Milli			1	3F-52 was drilled 6' W of 846G-52 at the same	E
	=		stringers	200			elevation for purposes of gasphysical legging	Е
	=		13.6° to 14.0° 11.0	t gree			Descriptive log is bas on outtings and drilli action below 34,6'.	ŧ
	=		molerately omented, thinly interbolied t	sent	ale		action below 34.6'.	Ē
l	=		14.0' to 16.4'	11				F
	50-		SAMBOTORE					E
	3		poorly seninted, wit	à ver				E
	=		of shale	and l				E
			14.0' to 14.3' tax,	فلاه	aly			E
	1		sel serenus					F
			14.3' to 15.4' 11gh		1			E
	-		15.4' to 15.9' SEAL gray, with yellow-br	S, 11	nterion			E
	60		15.9° to 16.4° 11¢					F
	=		16.4' to 25.3'					Ē
	=		SHALE					E
	3		16.4" to 18.0" gray	, 161	-			Ē
	=		16.4° to 18.0° gray bedded, interbedded thin (0.01° to 0.1°)	-	-			E
	=		elongate lumes of z and light gray sends	riose				E
	1		16.9' to 17.0'; 17 10.0' SAMBISTONE,	.91 to				E
	_ 3		hearly emented					
	70		18.0° to 22.3° gray dark gray at base, i with less measures t	, beer	ming Mari			E
			with loss measure to colored sendstone be	dia,	ust-			E
	ind infilling		22.37 40 25 37	ether				E
			gray, with small, in leases of send which	regel	r ase in			E
	=		maker detained					E
	=		25.3' to 25.4'; 26 24.1' SAME/2008,	.0' &				E
	=		24.8' to 25.3' au					F
	-	1			i	١	l	Γ

1 3	25.3' to 43.5'	E
1 =	SAMUSTONE	E
1 3	pederately concerted, manufact,	E
=	interbedded with meserous thin	E
1-4	beds, alongate lesse, and partings of shale	E
1 3	25.3' to 30.5' alightly menthered,	E
1 =	light brown, with some rust selered staining	E
1 = 1	30.5' to 34.6' unmenthered, light gray	E
1 = 1	2. 3, 6" core at 34.6"	E
1 4	34.81 to 36.21 SEALE	E
1 3	43.5' to 44.4'	E
1 =	LIMPOTORE	Ę
1 =	very hard to drill	E
1 =	44.4° to 70.0°	
	SEALE	E
1 4	dark gray	Ē
]	55.0' to 55.8'; 61.0' to 41.2!;	
ակապատիափակավապատիականուկա	65.0' to 65.2' SILTSTONE, ten, ealerrous	
	7. S. 0 70.0' in shale	

Deficiency Souths stern South stern Souths stern Souths stern Souths stern Souths stern Souths stern Souths stern Souths stern Souths stern South stern Souths			1 04	VISION	INSTALL	TIO
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A STATE DEFINITION OF SET 14.01 O.0' to 6.0' CTAY O.0' to 6.0' CTAY O.0' to 2.0' low plasticity, browniab-gray, stiff, soist, saw slightly coloarson. 2.0' to 4.0' low plasticity, browniab-gray, stiff, soist, saw slightly coloarson. 4.0' to 6.0' become gray at slightly coloarson. 4.0' to 6.0' become gray at slightly coloarson. 5.0' to 15.5' SHALE 6.0' to 15.0' badly seather gray and tan, troces of bedd gray and tan, troces of be					17. ELEV	ATIC
A TOTAL SEPTION WALE CLAMMIT CONTROL OF WATERIALS CLAMMIT CONTROL OF WATERIALS CLAY 0.0' to 6.0' CLAY 0.0' to 2.0' low plasticity, brownish-gray, stiff, soirt, sardy, with scattered grawling waters with the series of the series					16. TOT A	LC
Devision tesso champing of materials of the flowering of				1844		
0.0' to 6.0' CTAY 0.0' to 2.0' low plasticity, brownish-gray, stiff, soist, sandy, with scattered gravally brown, very stiff, soist, sandy, with scattered gravally brown, very stiff, soist, sandy, stiff, soist, sandy, stiff, soist, sandy, stiff, soist, sandy, stiff, soist, sandy, stiff, soist, sandy, stiff, soist, sandy, stiff, soist, sandy, stiff, soist, sandy, stiff, soist, sandy, stiff, soist, sandy, stiff, soist, sandy, stiff, soist, sandy, stiff, soist, sandy, stiff, soist, sandy, stiff, soist, sandy, stiff, soist, sandy, stiff, soist, sandy, stiff, soist, soist, stiff, soist, sandy, stiff, soist, san			_		C	
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0.0' to 2.0' low plasticity, brownish-gray, stiff, soist, sandy, with scattered gravelled and state of the st		1 7		CTAY	- 1	
brownish-gray, stiff, solat, sandy, with scattered gravelly brown, very stiff, solat, sar single single state of scale scal		E				
andy, with scattered grawling to the control of the		Ε		0.0' to 2.0' low p)	astici	ty,
2.0' to 4.0' low plasticity, brown, very stiff, moist, and eligibly colorances 4.0' to 6.0' become gray as tan, with a suggestion of bedding, coessional small limber of the stiff of the				sandy, with acatters	d gray	el=
slightly calcareous 4.0' to 6.0' becomes gray as 4.0' to 6.0' becomes gray as tan, with a suggestion of bedding, non-alcareous SHALE - 5.0' to 15.0' budly weather gray and tan, trones of bedd attructure, soist, sandy, with pockets very slity; soud con increases toward bane 13.0' to 15.5' very sandy w pockets of clayer sand, very soist		=				
slightly calcareous 4.0' to 6.0' becomes gray as 4.0' to 6.0' becomes gray as tan, with a suggestion of bedding, non-alcareous SHALE - 5.0' to 15.0' budly weather gray and tan, trones of bedd attructure, soist, sandy, with pockets very slity; soud con increases toward bane 13.0' to 15.5' very sandy w pockets of clayer sand, very soist		1 1	-)	2.0' to 4.0' low pl	astici	ty.
4.0' to 6.0' becomes gray at tan, with a suggestion of bedding, nonanional small list bedding, nonanional small list nonalies, non-calcareous 6.0' to 15.5' SHALE - 6.0' to 15.0' badly weather gray and tan, traces of bedding attructure, noist, sandy, with pockets very sitty; nould continuence toward base 13.0' to 15.5' very sandy w pockets of clayey sand, very sociat]		slightly coloarsons	0135,	san
tan, with a suggestion of bedding, occasional small list nodales, non-calcareous food to 15.5' SHALE - 6.0' to 15.0' badly weather gray and tan, traces of bedding attracture, soist, sendy, with pockets very sitty could continue to the structure, to 15.5' very sandy we pockets of clayey sand, very soist		}				
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gray and tan, troces of bedding tencourse, soils, andy, will pockets very sitty; could continue tences toward hance 13.0° to 15.5° very sandy w soint soils of clayer sand, very soint		1	L,	SHALE		
gray and tan, troces of bedding tencourse, soils, andy, will pockets very sitty; could continue tences toward hance 13.0° to 15.5° very sandy w soint soils of clayer sand, very soint		I J	V	6.0' to 13.0' badily	weath	ere
pockets very sitty; soud continuous toward base 13.0' to 15.5' very sandy m pockets of clayey sand, very soist	1	1 3		gray and tan, traces	of be	dde
20 increases toward base 13,0° to 15,5' very sandy we pockets of clayer sand, very soint	ł	1 = 3		pockets very silty;	soud o	ont
pockets of clayey sand, very	1	1 3		increases toward bas	3e	
pockets of clayey sand, very	l	_ =		13.0' to 15.5' very	r sandy	wi
		20-		pockets of clayey s:	and, vo	Ŋ
10 51 4- 20 01		E		moist		
1 15.5, 10 W.O.		1 =		15.5' to 20.0'		
SAND		ーヨ		SAND		
15.5' to 16.5' loose, satur.		1 3		15.5' to 16.5' loo:	3e, sat	ura
no sample		1 3				
16.5' to 20.0' becomes poor.		1 =		16.51 to 20.01 how	mag m	223
cemented, a little harder to		1 =		cemented, a little	mes po	to
auger, no sample		1]				
T. D. O 20,0° in sand		1 3		T. D. O 20.0° in sand		
	1	1 =				-
3		1 3				



HIS ARM

	E BORN, LINE COPPS 4 WOLL NO COPPS 4 WOLL NO MARKET OF BRUTTER	AGENCY OF E-12	ineers	Man Mari	12. NAM 13. YOT BUR 14. TOT	UFACTURE	OVER- LES TAKES	SA SUFECT SACRATION OF DRILL DISTURGED UNCOSTURGED 3 0 DARS 0
	6. DIRECTIO	H OF HO	INCLIMED	DE4. PROM VERT.		E HOLE	2	Apr 75 2 Apr 75
	7. THICKHE 0. BEPTH D		ERBURDEN ITO ROCK		ID. TOT	AL CORE	RECOVERY	FOR BORNE
	S. TOTAL 9	1		20.0*		T CONT	DOX OR	DEMARKS
	S.EVATION	ОЕРТИ	LESEND	CLASSIFICATION OF MATERI.	ALS	MECON-	SAMPLE NO.	(Drifting time, under lave, depth of machineting, over, if algorithmen)
to e1.21;		10-		0.0' to 6.0' CLAY 0.0' to 2.0' low p bromnish-gray, stiff sandy, with soatter 2.0' to 4.0' low p bromn, vary stiff, slightly calcareous 4.0' to 6.0' become 4.0' to 6.0' become 5.0' to 15.0' badle gray and tan, troos structure, soist, s pockets very slity; increases toward bs 15.0' to 15.5' ver pockets of clayer a soist 15.5' to 20.0' SAND 15.5' to 16.5' loo no sample 16.5' to 20.0' bed os sented, a little augur, no sample 7. D. 0 20.0' in sand	f, soid. distinction and interest and inter	ty, sandy, and line bered, edded with content ty with the correction of the correcti	Scr A B C	Drilling 0.0' to 20.0' 8" and Jer sumples A. 0.0' to 2.0' 8.2' 20.0' 8.2.0' to 4.0' C. 4.0' to 6.0' to 13.0' E. 13.0' to 15.5' to 20.0' we washed off of murer, sample mas obtained. Exter Samples are only to 4.0'. "Sator lovel Hole emking mater from 0.0' to 4.0'. "Sator lovel Hole emking mater from 5.5' to 20.0'. & completion of augeriant water level us at 1: 24 bour chock - 11.5 **Officet Boring was officet to right of way as shown be noosate, 3.25 and will be 40.0' for purposes of complying the 10' of 64.0'. To purpose of complying the 10' of 64.5'. "Value of 64.5'. To 10' of 64.5'. To make the 15.0' to 17.0'.

ENGINEER:			DRAWING NUMBER		EET NO.	128
-	i:		INV. NO. DACHGE	-80-8-00B	DATED : AL	4
			8A-51, 52 AM	ID 53		
CHECKED BY:	7		LOGS OF BO	RINGS		
	- İ	E	MBANKMENT AND	SPILL	IAY	
ORAWN BY:	1					
DESIGNED BY:	-		AQUILLA LA			
	S. ARM		INEER DISTRICT, PRPS OF ENGINEER FORT WORTH, TEXAS		WORTH	•
YM DO NO.	ACTION	DAYE	DESCRIPTION	OF REVISION	UNC. 1.7	
KECOKD	DEVATIV	G-WORK	AS BUILT			

TO ACCOMPANY FINAL FOUNDATION REPORT

11

Dente on Log Southmentern r:4914112 c. a. 5 18400 (61 41 864 Pailing 1500 Corps of Indineers THE THE TENT OF TH (Delling State, sector from depth of mendaning, one, if algorithms) E. 0.0' to 5.7' Drilling CLAY - -8 0.0' to 24.5' 8" augu 0.0' to 2.0' low to medium plasticity, brommin-gray, stiff, moist, slightly gravelly Jar supples A. 0.0' to 2.0' B. 2.0' to 5.0' C. 5.0' to 5.7' B. 5.7' to 8.0' E. 8.0' to 13.0' F. 13.0' to 18.5' 2.0' to 5.0' low plasticity, brown, very stiff, moist, gravelly, slightly sandy, with occasional small line nodules and small shells; small pockets of soft calibbe-like material at 2.5' to 5.0' D gravally, all with occasion modules and same asset like autorial modules and same asset like autorial modules and same asset like autorial modules and same asset like autorial modules and same asset like autorial modules and same asset like autorial modules and same asset like autorial modules and same asset like and same asset like and same asset like and same asset like and same asset like and same asset like and same asset like and same asset like and same asset like and same asset like and same asset like and same asset like and same asset like and same asset like asset like and same asset like and same asset like asset like and same asset like ass Ē Note: No sample from 18.5' to 24.5' as most of material was washed off of auger. 5.0' to 5.7' becomes very sandy and crumbly "fater level F Hole was making water rapidly from 6.0°. At completion of magering, water level was at 4.5° 24 hour check = 0.8°. gray, moderately hard, well commented Mate SHALE - 6.0' to 8.0' weathered, dark gray to black, thin-bedded, ironstained, non-calcarcous, with pockets and thin beds of saturated, olaysy send All snaples are cal-careous from 0.0' to 6.0'. **OTTERS Boring offset to right of way as indicated on mosaic. NP-54 was drilled approximately 8.0' W of 84-54. 8.0' to 18.5' becomes light gray and yellow-brown, with 17.0' to 17.5' a little sorted 18.5' to 24.5' becomes more sandy and slightly harder to auger. lost of material was washed off of auger T. D. in woathered shale at 24.5

00111	ME LOC	Sev		SHEY AL			Bala No.
PROLLE			Sou threatern	m. 970	Ant IV	rth M	trict
ANI				11. SHT	-	EVATION	THE PLANT
		- ~ ~~					HAYRM W BARLL
Corps (ROOF		12. YOY	Petline	1500	(mayyanga Is
	_	-	1 84-55	-		WE TAKE	1
THE OF RE						CORE D	
	W mt. 1			-	EHOLE	107 A	1789 000
OR ASHAIG					VATION TO	DF 87 HOL	6 Apr 75 1
L DEPTH SHIP	-		32.01	18. YOY	AL COME	RECOVERY	
. TOTAL MEP			41.01	7 7	real	1.0	Tratta
LEVATION !	COTTH LE	OH BO	CLAMPICATION OF MATE	THAT I	M.Come	POR CE	REMARKS AND A
•	•					T	
	3					Jar	
	4		0.0' to 9.0'			A	Del111
	₹		GAT				0.0' to 15.0
	4		0.0° to 4.0° lew	m1 n mb4 -	_	\vdash	0.01 to 41.0
	=	1	deart gray, very a	tiff, mo	st.	8	
	크		all by			-	lar me
	3	- 1	4.0' to 6.0' bec	ower gra		c	4. 0.0° to 4
	彐	- 1	with momercus ver	y small			3. 4.0' to 6 C. 6.0' to 5 B. 9.0' to 1 E. 14.8' to
	===						B. 9.0' to 1
	10		6.0' to 9.0' low light brown, stiff	plastic	ψ.		E. 14.8' to
	-		stiff, moist, sli	thily as	dy	ا و	"Sater le
			9.0' to 16.0'				At completic
	-						ering, 12,01
		La Ç	SHALE				oheak -
	3		9.01 to 14.81 gr	my and t	n,		€ Mote
			9.0' to 14.8' gr weathered, with a soft caliche-like	materia	of		0.0° to 4.0°
	∄:		at top				4.0' to 9.0'
	∃:	:::	14.8' to 15.0' w	th nume	ous	1	9.0' to 9.0'
	Ξ.		leases of ten sen	4			-
	20-		16.0' to 31.5'				3A-55 was do
	3:						af geophysic
- 1	4	• • •	SANDSTONE				of geophysic 32-55 is 0.4
1	3.		browni sh-gray				is based on
			23.5° to 26.0° 5	HALR			drill action
	7		31.5' to 41.5'				2. D. (15.0)
- 1	3						
			SHALE				
	3:		dark gray				
ı,	<u>.</u>	:::1					
1	~ =:						
	1						
	-	F-8					
	1						
	=						
	3						
	=						
	=						
1	10 J		T. D. Ø 41.0' in mb	ıl.			

			TOTAL TOTAL	(May all ayes)		Ilaio	No. 84-55
PRILI	LINES LO	ا ء	Southmentern	dert	orth B	Litriot	or mettre
	1-			10. 0122 AND T	T 00 m	A SHOW	
CARNIA	-	*** ** *	and a	_			
Gilla, Lime	ARTES					BHATION OF CO.	u
Corps		daee	78	TOTAL MA	1500		WHO! STURBED
		-	1 84-55			1 1	0
Mant of		-		M. CLEVATION			
BHACTIO	-	-			100	ATER &	Tompieres
-			D			16 Apr 75	16 Apr. 75
THERME		-	9,0*	IP. ELEVATION			
PEPTH 89		TO ROC	32,0*	IS. TOTAL COM		TON PORMS	
-			41,0"	Dasen	1.0.2	Brotte	
LEVATION	-	LEGEM	-	THE RESERVE	E PON OF	Continue about	CHARLES COUNTY STATE AND AND AND AND AND AND AND AND AND AND
-	-			7	1	-	to a spinish
	=				_		
	I J		0.0' to 9.0"	1	Jar	1	illier
	l B				٨	-	
	=		QLAY			0.0' to	15.0' 8" angue 41.0' 3" flah
	=		0.0" to 4.0" las	plantic ty.		teil	41.07 3- E1MA
	1 3		death gray, very s	stiff, mount,	В		
			mr) #	-	-	Jar.	maja
	=		4.0' to 6.0' bed	comes gray,	c	A. 0.01	to 4.0'
i	-1		with memorane ver	ry small	1	B. 4.0' C. 6.0' B. 9.0'	to 6.01
i i	3		line modules			C. 6.0'	to 9.0'
	10-		6.0' to 9.0' los	planticity.		L. 14.8	to 15.0°
	3		light brown, still	Cf to rear	1.		
	=		stiff, moist, ali	rayer's sends	٥	Take	r lerei
- 1	7		9.0' to 16.0'		1	At come	etion of mug-
	3				1	oring, 1	2.0'. 46 hour
	-3	-	SHALE			wheek -	
	=		9.0' to 14.8' gz	ray and ten.	-	€	Mote
-			Weathered, with a	to sense smore			
	H		soft malighe-like	materia:		0.0' to	4.0° mm-cal-
- 1	Ε.					4.0' to	9.01 mloares
- 1	=	٠	14.8' to 15.0' t	rith muserous		9.0° to	9.01 malearee
	_ =		lemmas of ten sen	MG.		967,606	•
1	20		16.0' to 31.5'			32-55	drilled 10.0
İ	3					of genth	OF IOF PURPOSES
l			SANDSTONE			37-55 is	55 for purpose ysical logging 0.4' higher to
	=	• • • •	browni sh-gray				
	-		1			drill an	on outtings as
	3		25.5° to 26.0° 3	BIAL E	1	84-55 1=	weathered to
		*****	31.5' to 41.5'		1	2. 3. (1	5.0').
ļ	= =	: : : :			1		E
ı	= =		SMALE		1	ĺ	E
	3		dark gray		1		
	3						ļ.
	x 0-3.				1	l	-
- 1	∃:				1		E
	→		1			ĺ	E
	-					1	E
1							<u> </u>
- 1	=		i	i	1	i	F
	-	-	ł				F
	-	-			1		
	7	-		1			E
	_=		4		1		1
	-		1			ı	
I	40 3		7. D. # 41.0' in mb		1 .		-

· .	VILLOR	METAL	1,000		Male No. 8.1-56
DRILLING LOC	Southwestern		Po	rt Port	th District OF 2 SHEET
PROJECT		18. SHZ 6	AND TYP	OF BIT	8" aurer; 3" fishtail
LACATION (Comment or As	- Land			LEVATION	MOUNT (FIRST - NAC)
Man Land Address		U. MAN	UF ACT UN	IN SEE	SHAYION SP SHILL
Corps of Phrincer			Fe	line i	500
101. C 100. (As above on draw			O'LR SAME		3 0
AND OF BRILLIER	0.4-56	14 TOT	AL HUMBE	R CORE I	meres 0
SHEETING OF HOLE		M. ELE	AVLION &	-	TER .
		M. BAT	E HOLE		#750 COMPLETED
EVERTICAL DIRECTOR		77. 81.8	VATION T	* 25 40	2 apr 75 2 apr 75
THICKHESS OF OVERSUADE		-			
BEPTH BRALLED MTO NOC		16. 19pm	icl (MEST T	on 2.5
TOTAL BEPTH OF HOLE	59.0*	1	ICK (The	YIL
EVATION DEPTH LEGENS	CLAMIFICATION OF MATER	ALS	A COMP	Start 1	STREET, STREET, STREET, of
1 3				JA	
1 3	0.0' to 6.0'			Α	Drilling
1 3	CLAY			5	
=	GMI		1	_	0.0' to 14.5' 8" aug 0.0' to 59.0' 3" fist
=	0.0' to 2.0' low n	lastici	tv.	c	tail
1 =	0.0' to 2.0' low p	moist,	7"	"	
1 4	very sandy				Jar manules
	2 01 an T 01 1	1 4 - 4	L		4 0 01 to 2 02
12:00	2.0' to 3.0' low p	rd.		0	A. 0.0' to 2.0' B. 2.0' to 3.0'
1 1/3	moist	,	L.,		
				6	D. 6.0' to 8.5' E. 8.5' to 10.5' F. 10.5' to 14.5'
10-3	3.0' to 6.0' low p	lastic	ty.	E	E. 8.5' to 10.5'
1	yellowish-brown and	red-bi	owa,	\vdash	F. 10.5' to 14.5'
三	3.0' to 6.0' low p yellowish-brown and medium stiff, moist and milty, with tra	very	Bendy	. 1	"Water lovel
= 100				F	
1 7 5	6.0' to 16.0'				Hole was making water
1 4 3					rapidly from 11.5° to
1 4/4/2	SAND (primary)			\vdash	14.51.
	6.0' to 8.5' tan,	noist.			Mote
	mon committed, fine-	graine			
	with occasional iro	astone			37-56 was drilled on
	concretions				& for purposes of go
	8.5' to 10.5' become		L.		SA-SE was Amilian tot
20	moist	761	ľ		morth. logging from
-					morth. logging from 14.5' to 59.0' was do:
	10.5' to 16.0' bea	-	\$		
	urated				outtings. Wenthered
	16.0' to 59.0'			1	19.0.
	~ /5.0				Jar samples A through
	SHALE				C were relegated with
					C were relogged with the following reclassi-
	unreathered, dark g	ray			
					And to 20' SAND: clayay to very clayay.
					SAND: clayay to
					they daysy.
				1	
)×				1	SAND: very clayey
		- 1		1	3.0 to 6.0
					SAND: silly &
					Westlern north
				1	clayey, highly Westhered primary Stratum.
-					
				1	J. W. Russe
				1	
		ł			
#					
	39.0' to 39.2' ele	rations		1	
40				1	
40 7					
300			i		
				- 1	
	40.04.4	. 1		- 1	
	45.5' to 45.7' mlay	stone		ŀ	
-				1	
-	47 01 40 49 70			ŀ	
	47.0' to 47.3' elay	#1000e			
- 200		- 1			
		ı			
50		- 1			
		ı	1		
		1	ı	1	
- Parting		- 1		- 1	
The state of					
		ı		1	
				1	
				1	
	T. B. 0 59.0' in mbale				
	T. D. 0 59.0' in shale				
8	2. 3. 0 59.0' in shale				

Amill Location	AGENCY Of Phy (As above	ineer	alan) '
e. benectes			
THICKNES	S OF 0V1	ROURDE	
. BEPTH OF	HLLEO H	TO ROCK	
ELEVATION			CLASSIFICATION
eLEVATION.	_ 5	CEREND	(Decert
	20 10 11 11 11 11 11 11 11 11 11 11 11 11		O.0' to 20.0' CLAY O.0' to 4.0' plasticity, stiff, sold 4.0' to 9.0' brown, very slightly sar 14.0' to 20, tan, stiff, saturated, v 20.0' to 25.0' SAND tan, loose silty, sligh urated 55.0' to 26.0' GRIVEL tan, nedius saturated, v rchusal at 2 T. D. 0 25.0'

RECORD DR	AWING
5711.00 NO. AC	
DESIGNED BY:	
DRAWH BY:	
CHECKED BY:	
SUBMITTED BY:	

			Note No. CA-56
X	Por	t Jort	h District OF 2 SHEETS
TER	ME FOR EL	TATAL	8" augur: 5" [ishtail
AM	PACTURE	line 1	MAYION OF BAILL
	Pai	ElVice	
_	ATION OF	MANUEL BA	TER .
-	VATION TO	2	4pr 75 2 Apr 75
107	M. CORE	CCOVER T	FOR BORNE 1
10	A Same	OL	OR JAKE REMARKS
_	BA.	S.	
		A	Brilling
		5	0.0' to 14.5' 8" auger 0.0' to 59.0' 3" fish- teil
Lad	ty,	c	
			Jar semples
l ed	ty. dy,	0	A. 0.0° to 2.0° A. 2.0° to 3.0° C. 3.0° to 6.0° D. 6.0° to 8.5° E. 8.5° to 10.5° F. 10.5° to 14.5°
		E.	D. 6.0' to 8.5' E. 8.5' to 10.5'
1 2 8	ty, own, sandy		
ď	leddin	F	*Vater lovel
			Hole was making water rapidly from 11.5' to 14.5'.
t,			Note
-			N-56 was drilled on & for purposes of geo- physical logging, and 28-56 was drilled 12' month. logging from 14.5' to 59.0' was done by drill response and euttings. Feathered to 16.0'.
70	y		physical logging, and 84-56 was drilled 12'
			14.5' to 59.0' was done by drill response and
•	-		outtings. Weathered to
			Jar samples A through C were relegged with the following reclassi- fications:
			fications: 0.0'to2.0' SAND: clayay to very clayay. 2.0'to3.0'
			SAND: clayey to
			SAND: very cloves
			3.0'106.0' SAND: silty &
			SAND: silty & clayey, highly westered primery stratum.
			J. W. Russe
	1		V
-			
_			
90		1	
		1	
	1	1	
	1		
	1		
	•	•	•

DRILL	ING LO	G POV	Court bennet own	MSTALL		South 1	Histrict or SHEET			
. PROJECT			Southwestern	m. Size and Type of Bit C' n						
LOCATION				SI. BAYO	H FOR EL	REPAYION	SHOWN (TON - MEL)			
**		*****		13. MANU	FACTURE	R'S DESIG	HATION OF DRILL			
. bank Lave				1	l'at15	ne 1500)			
COPDS HO.	Corps of Parincers					OVER-	6 0			
	MAME OF DRILLER					R CORE BO				
			•			LOUND WAT				
Bresent Bengarios	OF HOL			M. DATE		STAP				
TOVERTIC			DES. PROM VERT.				June 75 9 cune 75			
. THICKNES	of ove	RSURDEN				P OF HOL				
. BEPTH DR	LLED W	TO ROCK		18. TOTA	L CORE	RECOVERY	FOR BORING			
B. TOTAL DE	PTH OF	HOLE	26.01	-2	St. K	LOK	with			
ELEVATION .	DEPTH	FEGENO	CLAMPICATION OF MATERI.	ALS "	SECON.	SOX OF	(Drifting time, major from, depth of sectioning, stee, if significantly			
	_	-				_				
	=					Jar	0-1111			
	_	1 1	0.0° to 20.0°			A	<u>Drilling</u>			
	=		CLAY			1	0.0° to 26.0° 8" mur			
	3	i i					refusal at 26.0'			
	=		0.0' to 4.0' LOW to							
	=	1 1	plasticity, dark br stiff, moist, silty		LÀ	B	Jar mamples			
			estit, motor, allty			В	A. 0.0' to 4.0'			
	=	l i	4.0' to 9.0' low p		ty,		B. 4.0' to 9.0'			
			brown, very stiff,		-		C. 9.0' to 14.0'			
	Ξ		elightly sandy				D. 14.0' to 20.0' E. 20.0' to 25.0'			
	=		9.0' to 14.0' beco		dv.		F. 25.0' to 25.0'			
1	10-		with occasional sea				7. 27.0 60 20.0			
	=	1	. cnodules			C	*Fater level			
	_	, 1					antil Late.			
	=	1 1	tan, stiff, very po	plasti	oity.		Role making water at			
	=	1 1	saturated, very san				20.0'; at completion			
	-			~			augpring, mater level			
	=		20.01 to 25.01			1 1	at 12.0°; 24 hour che			
	_		WAND			D	1,500 0			
	=	1	Sand			10	**Offset			
	=	1 1	tan, loose to ned	ius der	se.					
	-]	milty, mlightly cla				Boring was o set am imately 70.0°, as sho			
	=]	urated				on nosnic. New cleve			
	20 -]	25.0' to 26.0'			\vdash	will be deter ined.			
	=]]	53.0, 20 50.0.			1 1				
	3		GRAVEL			E	Note			
		1 1				-	All samples are calca			
	Ξ	i I	tan, medium dense,	well @	aded,	1	3F-57 was dristed ad			
	_	1	saturated, with oot refusal at 26.0	CI BE TO	2-;		to auger hole for put			
	=	1	Trader de roio.			F	poses of geophysical			
	_	1	7. D. O 26.01 in grav	rel.			logging.			
	~	1			1		This is a relogging of			
	=	1					BAJF-57.			
	-	1 1			ı		The clay in jers A to			
	=	1 1			ı		C has dried out source			
	30-	1			ı	1				
	=	1			l					

RECORD DRAWING-WORK AS BUILT SYLIDA NO ACYON DATE DESCRIPTION OF REVISION U.S. ARMY ENGINEER DISTRICT, FORT WORTH CORPS OF ENGINEERS PORT WORTH, TEXAS DRAWN BY: EMBANKMENT AND SPILLWAY CHECKED BY: LOGS OF BORINGS 8A-54, 55, 56 AND 8A3F-57 BUBMITTED BY: INV.NO.DACMGS-80-8-0005 DATED: AUG 1980 CONTR. NO.DACMGS-81-C-2015 DRAWING NUMBER SHEET NO. 129 BORWING NUMBER SHEET NO. 129 BORWING NUMBER SHEET NO. 129 BORWING NUMBER SHEET NO. 129 BORWING NUMBER SHEET NO. 129 BORWING NUMBER SHEET NO. 129 BORWING NUMBER SHEET NO. 129 BORWING NUMBER BORWING N

TO ACCOMPANY FINAL FOUNDATION REPORT

		2011	r15+Ow	METAL	A TION			Seedle 9
	sei L		Couthwestern	1	Cort	lorth I	istrict	OF BHEETS
1. P =0 it 2 5"				16. 942 2	AND TYP	-	8" A. CVT;	3" fishtail
1 qu 1 1	100.00		-1	III. BAY	UM FOR E	EATLION	SHOWN (TORS - A	24)
				-		ATT LUX	HATION OF BRIL	
D tit L and				1		ng 1500		
(017:5	1.12	reers		12 707	AL NO. OF			
E. H 74.1 46			2 mms	300	DEN SAMP	LES TAKE	4	0
			643F-58	14. TOT	AL HUMBS	R CORE S	ozes O	
Premer.				IN ELE	VATION &	HOUND WA	768 e	
				-	E HOLE			********
C3. e	=	H-CL1448		_			9 Eay 75	
7. 7 416 K 4 E 1	. o. ovi	RSURDEN	4.51		VATION T			1.2 ±
0. 0 (PT) D			2.5'	16. TOT	AL CORE	RECOVERY		
. TOTAL DE				10. 249	TON /	יוויינייני	on 1-	
			7.01	1 4/				
ELEVAT ON	17E+76	LEGEND	CLASSIFICATION OF MATERIA	ALS U	S CORE	SAMPLE		-
-						T	and the same of	n, or regardeness
	-	1				JarA		
		1	0.0' to 2.0'		1	B		
		1 I			1	_	Det	Lline
	-:	≀ l	CLAY		ı	C	_	
	1 =	1					0.0 to 7	O' 8" miger
	-		0.0' to 1.0' low p.	lastic	ty.	D		1.0° 3" fish
	-	3.43	bown, stiff, moist,			-	tail	
	1 2	A.T	with small line node	11 08		F	Inn a	emi es
	-		1.0' to 2.0' with		_	F	APE I	The same of the sa
			small pockets of so			\vdash	A. 0.0' \$	1.0*
	-		like material	. s, OR.	-	{	B. 1.0' &	2.0
	-	1	TARE MARKET				C. 2.0' \$	3.01
	=	1 1	2.0' to 4.5'		1		D. 3.0' &	4.5"
	10-	1					E. 4.5' t	6.0"
	-		SAND		}		P. 6.0' t	7.0"
	10-	1				i 1		
		1	2.0° to 3.0° tan, 1	sedium	dense,	1 1	TAVE] Creal
	-	1 1	moist, clayey			1 I		
	=	1 1						encountered
		1 1	3.0' to 4.5' become	ES CENT			ebeck - 4	ng. 24 hour
	-		elly, well graded, t	20 3.	1			
		1	4.5° to 7.0°		1		40 Kl a	ration
	-	1	4.7 80 1.0		1			
	=	{	SHALE		ì	1		of staked
		1 1				1		518,241; but
	=	1 I	4.5' to 6.0' tan as	d gray			farner ha	d plowed up
	=	1 1	badly weathered, re-	orked	ľ		stake.	
	_	1 1	with sand in upper	portion			_	
			numerous ironstone	nodul es				rie.
	-	1	calcareous				0.01 4- 6	.0' calcareo
	_		6 01 to 7 01		L.,			.0' non-cal-
			6.0' to 7.0' gray, non-calcarcous, with	THE TANK	tone		CATADUS	
			mer-valuercous, with	TAOM	AOD 0			.0' weathere
	-	1 1			I			
			2. D. 0 7.0' in shale		1			offset 7.01 S
					I			il hole, whic
	=	i I			I			of 71.0' for
	-				1		logging.	ar &mobularica

ING LO						
	_	Southwestern				intriet or 1 tes
			m. Mig		-	F score 4" melbit
		-	11. 10.17	- res m	LEVATION	SHOWN (THE P. LEE)
(- continu			13 144.00	117 - C	THE DEED	MANUAL OF MANUAL
ABBRCY			1			
of Bac	neers		12 707			MOTURED UNDIATURE
-	-	6400-50	-			4 10
MILLER						
			IS EFE	VATION O		
			M. DAY	E HOLE		
M DH	HCL H460	DEG. PROM VERY				21 Apr 75 22 Apr 7
-	ROURGE	6.0	$\overline{}$			
-	TO ROCK					
			1700	TA	A.	T/T
	-					REMARKS
	reason	(Poortales)		wich.	SAMPL E	(Prilling Hart, water lane, depth o
-	•	4			1	
=					JA-A	
=		0.01 to 6.01			0	Brilling
-		A.A. M. B.O.		ı	0	
=		CLAY			1	0.0° to 7.0° 8° aug
=						
コ		0.0' to 0.8' low m	astini	T.		Jac emples
=		brom, moist, sandy,	great	iy.	0	THE PROPERTY.
6		non-calearsons, with				A. 0.0' to 0.8'
- 3		line mobiles			E	B. 0.8' to 3.5'
3				L		C. 3.5' to 4.5'
-	3.7	0.6, 40 3.5, Jon b	estici	у.		D. 4.5' to 6.0'
=					1	E. 6.0' to 7.0'
=		seed, straintly our	AC AOUR			
ー		3,51 to 4,51 horses		11-		
-				L-~	1	"later level
7		4.5' to 6.0' low w	astici			24 hour check - dry.
7		reddish brown, very	stiff,			on mour obsect - ery.
=		moist, sandy and gre	welly,		1	Note
		ouleareous		1	1 1	au.
=				1		Bole was offset E. 6
3		6.0' to 7.0'				and drilled with a
-3						rockbit to 91.0' for
7				ŀ		purposes of geophysi
コ		meethaned, over and		,		logging.
\exists				l		
=				l		
_3		T. D 0 7. " in chale				
7				l		
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	MERCY OF BOY THE BOY HOLE AL OF BY BUTTH OF BUTTH	MELINE WITH PARTY OF THE PROPE	SC Decineers Control of the Control	Commission or Name Commission or Name Commission or Name Commission of Commiss	Commission or handled Statistics Statist	LE MANUFACTURE POINTS LE MANUFACTURE POINTS SE BENTIMONE SANT-59 LE VOTAL MANUFACTURE POINTS OF MOLE LE VOTAL MANUFACTURE POINTS OF MOLE LE VOTAL MANUFACTURE POINTS OF MOLE LE VOTAL MANUFACTURE POINTS OF MOLE LE VOTAL MANUFACTURE POINTS OF MOLE LE VOTAL COME MANUFACTURE POINTS OF MOLE LO LE VOTAL COME MANUFACTURE POINTS OF MOLE LE VOTAL COME MANUFACTURE POINTS OF MOLE LE VOTAL COME MANUFACTURE POINTS OF MOLE LE VOTAL COME MANUFACTURE POINTS OF MOLE LE VOTAL MANUFA

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Paris.	(Capelia	No		W. 184	THE PARTY	TANAM	E.Mas:	molhit	\dashv
_	ARRIVA			IL HA	HUP ACTUR	ER'S DESK	MAYNEL OF BALL		\dashv
		ineers				e 1500			
LE WA	(A	A 114-01	649-59	** 10	DE II	LES YARE	* 4		•
-	BONLLEN		94/4-23		TAL MUNICIPAL				_
PARTE .	6 of 1001			19. EL	EVATION O				
		MCrimes S	DEG. PROM	WERY.	72 104.2		21 Apr 75	22 Apr 7	5
HCHIMES	-	RBURDE	× 6.0°		EVATION T			.5	_
-	-	TO ROCK							- 1
TAL OF	PTH 00	HOLE	7.0'	0	mat (10	TIT.		- 1
	мети		CLASSIFICATION OF ILE			90X 07	M	MARKS	7
•						7			
	=					JANA			
	=		0.01 to 6.01			0	Dri	lling	- 1
	=		0.0. 80 0.0.			8			- 1
	=		CLAY			1	0.0° to 7	.0 8° mm	- I
	_=					c			- 1
	=		0.0° to 0.8° 10	w plastic	Lky,		Jan e		- 1
	-		brown, moist, sa			0		MILES SA	- 1
1	6	3	line mobiles	mith very	mall.	-	A. 0.0' 1	0.81	- 1
	=		TIME INCOME.			E			- 1
	=		0.8' to 3.5' lo	w wlastic	de.				- 1
	_		bross, hard, soi	st. slick	I.,				- 1
	=		mendy, alightly			ii	7. 8.0. 8	6 7.0	
						1 1			ı
	=		3.5' to 4.5' be	comes firs	rally		"Bake	r level	ı
			4.5' to 6.0' lo						
	_		reddish-brown, w				St pour o	beck - dry.	- 1
	=		moist, sendy and	aravelly.					
			caleareous		1		200	•	- 1
	ափակա				1		Bol e was	offeet P. 6	
	=		6.0' to 7.0'						
	-		EMALE		1				
	=		E		ı				021
	=		weathered, gray	and ten	ı		logging.		- 1
	_		mon-cal careous		i				ł
1	1111								ł
			T. D 0 7.01 in mh	ale		,			- 6
	=				1	.			- 6
	=				1	1			- 1
	-				1	ı I			- 1

					Nois No. 364-50
DRILLING LOG	Southwestern	WSTALL	ATION .	N	SHEET 1
Morecy	300 towestern	10. WZE	AND TYP	CO BIT	strict or 2 mest
Aguil 1 a		IN BAY	AN FOR E	CEVATION	ENGER (TER - MEL)
	President	13 44-			SHATION OF SHILL
BRILLING AGENCY		1			
Corps of Engineer	rs	12 707	L 10 0	OVER-	
	364-60				
NAME OF BRILLER		14. TOT	ATION S	R CORE I	
SERTION OF HOLE	a	-			ATED ICOMPLETED
MARALET CHEFM		IS. SATE			2 Um 75 47 75
THICKNESS OF DYERBURD	EN 25 CT	17. ELE	ATION TO	# OF HO	LK 538,521
SEPTH DRILLED INTO RO	E 40.01	10. YOT	L CORE	RECOVER	Y FOR BORING
TOTAL DEPTH OF HOLE	54 S1	100	2017	179	and the
LEVATION DEPTH LESEN	CLASSIFICATION OF MATERI		3 CORE	BOX OR	REWARKS
	95.57 CK 19.01 54.51 CLASSIFICATION OF MATERI		WECOA-	BO.	(Delling rims, water loss, depth of meeting, ore, if significant
= =					
=	0.0' to 19.0'				Drilling
	10.0				
1 =	GAY				0.0' to 54.5' 42" and
1 -					refusal at 54.5'
1 7	low plasticity, bros	m, sen	dy		54.5' 42" dry barrel
	19.0' to 27.0'				0.0° to 54.5° 42" au refusal at 54.5° 54.5° 42" dry barrel refusal at 54.5° 0.0° to 36.0° casing
1 7					THE REPORT OF CAMPUS
=	SAND				"Mater level
1 -	A				
1 7	tan, loose to medius	dense			Hole was making water from 34,0° to 35.5°. 24 hour check (before easing pulled) - dry.
L 7	elayey at top, moist	.	i		24 hour sheet ()-4
10 -	27.0' to 35.5'				saring millest Defore
=					
	GRAVIEL and SAND	- I			Note
10	At Committee de la la la la la la la la la la la la la				
	marriages to pick ou	E cont	ate		Hole was logged by
7	difficult to pick ou on suger; gravel dar well graded, very so saturated at 34.0°; tem, gravelly	dat to	3,		Hole was logged by outtings, drill action and visual inspection.
=	saturated at 34.0':	send			and visual inspection.
1 4	tem, gravelly				0.0' to 35.5' calcard 35.5' to 54.5' non-ca
1 4					05.5' to 54.5' mon-ca
=	35.5' to 54.5'				Prisary is unweathered
	SHALE			1	_,
		- 1	1		
20 -	dark gray, unreather calcarsous, with mus- thin lenses of sands and modules of olay-	ed, no	-		
= =	calcareous, with mus	erous			
=	thin lenses of sands	tone,			
	ever mountes of of sh-	ronst	ne		
E	39.91 alauitmas			1	
1 3	39.9' clay-ironst 44.7' to 44.8' cl. stone nodules	ay-dry	_ 1		
	stone nodules	1		1	
1 =	54.51	- 1			
	~			1	
=	SANDSTONE	ŀ			
1 =		1		ı	
=	well emonted, could	not			
	well emonted, could penetrate with auger barrel	or dr			
8 	- serrer				
1 =	T. D. 0 54.5' in sands	tone			
1					
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1 -1		1	!	1	
#	J	1	1	1	
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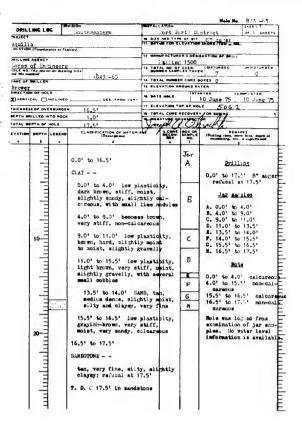
I. PROJECT	LING LO	c	Southweatern
Aqui 2. LOCATION	lla.	man or Att	ries)
1. DRILLING	AGENCY		
Corp	of S	nginee	rs
			364-60
Mart	in and	arti	n
X VEAT			DEG. (
7. THICKNES	s of ove	RBURDE	
B. TOTAL D	PER OF	HOL E	36.5'
ELEVATION	-		CI. ASSIFICATION
	=		
	=		
	Ξ		low plastici
	-		nodules and
	_=		become more
	=		5.51 to 13.11
	=		
	Ξ		
	10		tan, calcare
	Ξ	- 123	of sand
	=	- year	13.1' to 14.0'
	. =		: ILIESTONE
			light gray.
	=	1.	sented, diff:
	111		14.0' to 15.2'
	-	4 4	SHALE
	=	ALL	tan and man
	20 —		with sones a
	=		
	=		
	=		
	Ξ	143-74	with numerous
	-1	12.2	
	Ξ		16.5' to 25.9'
	-	-	SHALE
	- I		16.5' to 24.5
	~ =	Table 1	fractures fr
	1	==:	
	=	<u>i.</u>	unweathered
	-		ciayi to inau!
	=		
	=		
	_3		poorly count
	=	: : : : : : : : : : : : : : : : : : :	with shale
	40 =	1.1.1.1	
	=		WD 41 4: WF 1
	SAME - SAME TO SET OF SAME SAME STORE - SAME TO SET OF SAME SAME STORE - SAME STORE SAME STORE - SAME STORE SAME STORE - SAME STORE SAME STORE - SAME		
1	The control of the co		35.0' to 37.0'
i	Ξ		
	_=		
]		
	=		
	Ξ		SANDSTONE
	=		gray, poorly
	Ξ		T. D. 0 42.01
	=		
	=		

	U.S.	RECOR
DESIGNED BY:	DESIGNED BY:	
	DRAWN BY:	
DRAWN BY:		DESIGNED BY
	CHECKED BY:	DRAWN BY:
		SUBMITTED
SUBMITTED BY:	SUBMITTED BY:	

76A-SO MEET OF 2 SMEETS	DRILLING LOG	Southweatern	Crt Torth	Hale Na. 371-61 SHEET 1 Dintriot OF 2 SHEET	
	Aquilla 1. LOCATION (Coordinates or A)		11. 62 TUN'FOR ELEVA	віт 42 ^н дипер тіон зн очн (там м м іс.)	
MOTS THE SEC	1. DRILLING AGENCY		12. MANUF (CTURER'S)		
0	Corps of incined HOLE NO. (As shown on share and No numbed E NAME OF DRILLER	364-60	1). TOTAL NO DE OVE BUNDEN SAMPLES 1		
PLETEO	Martin and arti	n	IL ELEVATION GROUN	DWATER #	
3 Tay 75	THICKNESS OF DVERBURDS		17. ELEVATION TOP OF	12 Tay 75 12 Tay 75	
	S. DEPTH DRILLED INTO ROCE S. TOTAL DEPTH OF HOLE	36.51	IN TOTAL CORE RECO	VERY FOR BORING	
n, depth of Attinued	ELEVATION DEPTH LEGEND	42.01 CLASSIFICATION OF MATER		OR REMARKS (Dylling tono, worse love, depth of monthering, ott., if algories and	
====	• • •	0.01 to 5.51		, seeming of a significant	E
15 E	1 4	CIAY		<u>Drilling</u>	Ė
12" augus. .51		low plasticity, bro stiff, moist, with	wm, very	0.0° to 42.0° 42" auges 0.0° to 8.0° easing	Ē
rrel E		culiche-like materi	of soft	"Nater level	Ē
*E		5.5' to 13.1'	a downward	liole is making water	Ē I
		SHALE		at 30.0'. 18 hour check - 23.3'	Ē
E	10	tan, calcareous, we	athered	lioto	Ē
		interbedded with the	in beds	Hole was logged by cuttings and visual	Ē
1		13.1' to 14.0'		inspection. 0.0' to 14.0' calcarco	-
		: IMESTORF		14.0° to 42.0° non-oul	E
		light gray, sendy, sented, difficult to	mell ce-	5.5' to 24.9' weathered 24.9' to 25.9' unwea- thered	E
	3 to 3	14.0' to 15.2'		25.9' to 32.1' weathers 32.1' to 42.0' unwear	Ē
		SHALE		thered	Ē
È I	20	tan and gray, weath with zones sandy, n	ered, on-calcircous		Ē-
_		45 24 44 44 51			Ē
		SANDSTONE			Ē
E	→	brown, poorly cerem with munerous thin	ted,		<u>-</u>
Ė l		shale	V.		
<u>:</u>	1 1 1 1 1 1 1	16.5' to 25.9'			=
	200	SHALE			Ē
E	7,-22-	16.5' to 24.9' tan weathered, with some fractures from 20.0'	e ticht		Ē
F	1 日潜	24.9' to 25.9' dar			Ē
_		unweathered			Ē
		SANDSTONE			Ē
		25.9' to 32.1' tan	weathgred.		Ē
		poorly comented, int	erbeided		-
	40				
E		32.1' to 35.0' gra	y, unwes-		Ē
E I	42	thered			Ē
₽ I	1 =	35.0' to 37.0'			=
<u> </u>	1 = 1	dark gray			Ξ.
E I		37.01 to 42.01			<u> </u>
]	SAMESTONE			
E I	1	gray, poorly cenent	ed		-
E	4	T. D. @ 42.0' in sand	stone		<u> </u>
E I					-
E					
F					4.7
					1
	1	RECORD DRAWING	-WORK AS BU	ILT	
	. 🗀				
	34/7.	DO NO ACTION		DESCRIPTION OF REVISION	
		U.S. ARMY	CORPS C	DISTRICT, FORT	WORTH
	<u> </u>	IGNED BY:		WORTH, TEXAS	
	055	HUNED WY:		AQUILLA LAKE	
			A	QUILLA CREEK, TEXAS	
		WH BY:	FMRANI	KMENT AND SPILL	way
			LINDAN	WENT MIND SPIEL	WAY 61
	CHI	ICKED BY:		GS OF BORINGS	
			6A3F-	58, 59, 36A-60 AND	61
					S DATED: AUG 1000
	1	PRITTED BY:		INV. NO.DACWG3-80-8-008	
		INEER:		CONTR. NO PACHGS-81-C	

		rivision .	IMSTALL ATION		Hole No. 351-62
- 100F		Southwestern	Port 40	orth in	trict lorg sweets
day 151	· Constitutes at	Transact .	1		12" at ger (Shown from 2 mts)
CHILLING	AGENCY		1		CHATION OF BRILL
Corne	of norce	rg	TOTAL NO O	PLES TAKE	0-17UNES UND-STURSED
AME CO	MILLER	35A-62	18 TOTAL HUMB		
Brever	4 OF HOLE			-	
I vent	AT CHERMI	DE6. FROM VER		1_1	3 1'ay 75 13 1'ay 75
HICENES	S OF GVERBURD	E* ±1.0'	17. ELEVATION		
€PT+ DF	PILLED INTO RO	r59.01	18. TOTAL CORE	HECOVER	y ron soning 1
	PTH OF HOLE		Joseph (BOX 00	rockle.
	DEPTH LEGEN	CLASSIFICATION OF MATER	RECOV	HO	REMARKS (Delling them, moter loan, depth of machinging, etc., if arguite and
	3	0.0 to ±1.0'			Drilling
	= :				0-01 to 59.01 42" mirro
	3 .			1	0.0' to 59.0' 42" auge refusal at 59.0'
	=	±1.0' to 19.3'	Į.	1	0.01 to 8.01 caming
	-] `	SHALE			"Vater level
		weathered. light mr	ay and	1	Hole was dry to 59.0° during augering, except
	4	tan, non-calcareous			during augering, except
	= 1	19.3' to 25.3'			it was seeping slightly at 59.0'. Very little water was in the hole
	10 -	SANDONONE			water was in the hole after 24 hours.
	=				
			red		<u>Note</u>
		25.3° to 53.8°			licie was logged by dril action and visual ins-
	1	SHALE			pection.
	3				. 0.0° to 55.8° non-cal-
	-	dark gray, unweather some thin lenses of and siltstone, and	sendstone		Gt. Poous
	= 4%	and siltstone, and of clay-iro:stone	nodul ea		53.8' to 55.0' mostly calcareous
	- mark				1.0' to 25.3' weathere 25.3' to T. D. unwea-
	20 -	25.8' to 26.3' s	1		thered
	20 -	40.0° to 40.6° w	ith mun-		
- 1	3000	erous siltstone 1	enses		
	=	53.8' to 55.0'			
- 1	3::::	S NUJTONE			
	3:33:3	soderate y comented	. calcornous.		
- 1	- Juan		, , , , , , , , , , , , , , , , , , , ,		
- 1	390	55.0' to 59.0'			
	- AB	could not examine,			
İ	₂₀	to be sandstone and	shale		
	∞ <u> </u>	interbeddod			
	3				
	4.4	LILESTONE (probable)			
- 1	3		1		
ļ		well cercuted, coul-	e not		
- 1	4 1	T. D. 6 59.0' in line	ntone	1 1	
i	\exists	1	June		
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			VISION		100		Field Pie.
DRILL	-	×	Nition Nouthwestern	MIT AL	ort Jo	et's no	atmet
PROJECT			- N. STARGOVETTI	W. H.E.			
Aquil)	2	was at \$1		11 847	W FOR E	EVATION.	THOUR THEN I AM
				12 7000	uf ACTUR	e s pfu	SHATION OF SHILL
DRILLING					ailing		
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T VERT				M BAT			10 June 75
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. TOTAL DE	PTK 0F	HOLE	17.5"	V	and ?	1.01	rekt
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ELEVATION.	PERTH		(Description)	,	GRY.	HO	(Dystling thee, up-
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	=	1				Jar	
		1	0.0' to 16.5'			A	Drill
	=	}	CLAY		1		
	=	1				1	0.0' to 17.
		1	0.0° to 4.0° low pl	astici	у.		Leinesi s
	_	1	dark brown, stiff, n	oist,		_	Jar sar
	_	}	slightly sendy, alice			В	
	=		careous, with small .	trae n	parul ea		A. 0.01 to
			4.0° to 9.0° become	s brow	h.		B. 4.0' to
		1	very stiff, non-calc)	D. 11.0' to
	=					1	E. 13.5' to
	10-		9.0° to 11.0° low p			c	F. 14.0' to
	-		brown, hard, slightly to noist, slightly g				G. 15.5' to
	_	1	w notes, sugarly g	c 4A611	•		H. 16.5' to
			11.0° to 15.5° low	plesti	mity.	D	Not
	=	1	light brown, very st	iff, n	ist,		Net
		1	slightly gravelly, w	ith se	veral		0.0' to 4.0
	-	1	small cobbles			F	4.0' to 15.
	=		13.5' to 14.0' SA	ND, ta	n,	6	15.5' to 16
	=		medium dence, slig			-	16.5' to 17
	=		silty and clayey,	very f	ne	H	carcous
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			grayion-brown, very				examination
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	=		16,5' to 17,5'				information
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			SANDSTONE				
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	_		tan, very fine, silt		htly		
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ELEVATION	DE#*H	POFMO	CLASSIFICATION OF MATERIA		- CORE	BOX OR	2000	NKS.	-	
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			with small, lime node	es	1		Cas ber			
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MOITON CO MY	DATE DESCRIPTION OF	3 1 V 5:0N	
U.S. AR	MY ENGINEER DISTRICT, FI CORPS OF ENGINEERS FORT WORTH, TEXAS	ORT WORT	Н
DESIGNED BY:	AQUILLA LAKE		
DRAWH SY:	EMBANKMENT AND SI	PILLWAY	
CHECKED BY:	LOGS OF BORIN 364-62, 843F-63, 64		
SUBMITTED BY:	INV. NO. DACW63-80-	8-0085 DATED:	AUG. 1980
	CONTR. NO. PACILLOS		SEQUENCE
ENGINEER:	DRAWING NUMBER	SHEET NO.	131

JEC.			Southwestern	P. MIE	ort lor	th Dis	trict or 2 ments		
		eres as fin	eim)	11. BAYOM FOR ELEVATION SHOWN (THE WARL)					
	ACENCY O' TO	incorp		1 4	ailing	1500			
	DA LLEA		- BA60-60	13. TOTAL NO. OF OVER- BURDEN SAMPLES TAREN 11 0					
	H OF HO			SE ELEVATION GROUND WATER					
		MCF1440	DEG. PROM YERT.	15. ELEVATION TOP OF HOLE \$34.9					
		RBURDE	2111	19. YOT	AL CORE P	ECOVER	FOR BORING BIG		
	PYH OF		25.0° 59.0°	(aug 10	ATUREO	100	with		
7101	DEPTH	LEGEND	CLASSIFICATION OF MATERIA	11.5	RECOV-	BOX OR	(Drilling limb, maler bean, depth of membering, etc., if objectional		
	•	•			•	Ju A			
į	=		0.0° to 25.0°			В	brilling		
1	Ξ		CLAY			1)	0.01 to 32.51 8" mage 32.51 to 59.01 6" mage		
			0.0° to 0.5° low pl dark brown, hard, sl	astici	ty.				
	Ξ		moist, silgnily sand	ightly y and		C	JAK ROSALOS		
	=		gravelly			D	A. 0.0' to 0.5' B. 0.5' to 4.0' C. 4.0' to 6.0' D. 6.0' to 8.5'		
	=		0.5' to 4.0' become moist, with small li	s very	stiff,		D. 6.0' to 8.5'		
1	=		and occasional pocker cariobo-like materia	ts of	moft,		E. 8.5' to 13.5' P. 13.5' to 18.0' G. 18.0' to 22.0'		
	10		4.01 to 6.01 become			E	G. 18.0' to 22.0' E. 22.0' to 25.0' I. 25.0' to 26.0'		
	=		with name: our nodule	18	<u> </u>		I. 25.0' to 26.0' J. 26.0' to 31.0'		
	=		6.0° to 8.5° low pl brown with light bro	astici	ty,		J. 26.0' to 31.0' E. 31.0' to 34.0'		
			very stiff, moist, s	andy	PAKE,		Carton sacules		
Ì	-		8,5° to 22,0° become	es Yer		F	1. 43.0° to 43.9° 2. 57.7° to 58.6°		
	:-		8.5° to 22.0° become sandy, crumbly, with line nodulos in lower	T 4º	conel				
	10-		22.0° to 25.0° low tan with some gray,				Tate: level		
	20		tan with some gray, moist, sandy	very s	ur,	6	Hole was not bailed; 24 hour sheek - 28.9°		
	20		25.01 to 26.01				Tota		
	=		SAMD				0.0' to 34.0' calcare 54.0' to 56.6' mon-or		
	=					H	54.0' to 56.6' mon-or careous, except well cenerted mandatone		
ļ	Ξ		tam with some gray, dense, noist, fine, and slightly clayey	silty,		"	beds		
	=					I	Primary is unweathered Well cemented mandator		
	=		26.0' to 34.0'				mf 56 41 40 57 B1		
İ	-		GRAVEL			3.	end in this boring.		
-	30-		26.0° to 31.0° ten, denne, well graded,	to 3/4			/ s of 846C-56 for purpo		
	~ =		saturated				of geophysical logging It was drilled to 81.0		
i	-=		31.0° to 34.0° with sobbles to 4°	Muser	32.5	k	`3F-GG		
	=	\times	54.0° to 58.6°		110	34.0			
	=	∇	SHALB		44.2				
	-	\Leftrightarrow		- theme	26.0	Fox			
ı	Ξ		34.0° to 41.2° users	casion	370				
1	=	\geq	beds of studstone; m	e to f					
_	40		from gravel alove		68				
9	=				40	415			
			37.5' to 37.7' light gray and g calcare us, well	ray, p	rtly				
į	=	c)	calcare us, well	cecen	10.7	2			
	=		37.7' to 37.9' stone, light bro	olay-i wn, ha	rd				
-	-		38.8° to 40.0° secting, tight,			463			
	Ξ		secting, tight,	low an	100				
1	=		41.01 to 41.21		DNE	3			
	50-		light gray, well calcareous		ed,	503			
	Ξ			xy, da	5/.0	,			
	=			clay-é		4			
	=		stone, brown		10 2	54.1			
-	=		43.9° to 44.8°	with t	ght, St	_			
1	-		10w angle, parra 0.1' apart, which	n tend	to	5			
	=	2	have slickenside	*	60.5	50 /			
-	=		45.6' to 45.9'	45° ti	mt 500		7. D. 9 58.6' in shale		
	60		Joint						
	=		46.8° to 54.6° wi pookets, lenses, a	th mu nd thi	arous				
			pockets, lenses, a beds of poorly sea gray, non-calcareo less than 0.2° thi	en ted	ight artone,				
i	-		less than 0,2' thi	ok					
	hunhun		47.7° to 47.8°; 48.2° SANDSTONE	48.0°	to				
	1		omented, light	FIY.					
			OT AND						
	_		54.6° to 58.6° m	**		1			

PRILL	nes La	6 6	5 sthweetern	HEYAL	art In	da Die	Hele No.
-				I BAY	MI FOR ET	EVATION	B" NOT: 6
SHILLING !		1000 or 500					SHATTEN BY MICE
ST.	, had	seers.	-	TA TAT	miling	SYER- ES YAKE	tm 0
-	Chill Can		8460-67	. 761	AL HUMBE	n cont o	maxes 5
	87 HÓL			16. BAT		1014	A780 6
			1 1401		YATION TO	P OF HO	536.71
		70 ROCK	22.5'	-	ATUME OF		Y 14
TOTAL DE		r Dogge	S6.5'	00	1	POX OR	Brockte.
•					ERY	100	
	=						Beill
	ᆿ						
	크						0.0' to 32. 32.5' to 56
	=						Jenni
	ᆿ						No samples
	=						Med
	=						Prinary was
	۳=						lenses. Or calcareous.
	크						woathering
	milmilmilm						locate well
	=						57.8' of 84
	且						67 was dril
	∃						of 8460-36 of 3%-67.
	=						drilled to purposes of
	E.		32.5' to 33.7'				longing.
	= =						
	=		Seri				
1	=		33.7' to 34.0'	į			
	3		MARROWEE				
	=		well communication of the several pobbles of stone, and pyrite, end	eriti firo	o, D		
	Ξ			eerod	ů.		
	3		34.01 to 35.31				
1	• - =		Lort				
	=		35.5' to 53.3'				
	=		SHALE		L	20.5	
	크		35.3' to 37.1' ten am	4 674	34.0	801	
	3	$\stackrel{\times}{\sim}$	tep to mostly gray at sandy with manarous le sandstone	beer,	ofL	1	
	크	E.		1	1.7		
	4		36.3' to 36.4' SAMM moderately committed,	onl-	.cs.o	38.	
	Ē		Onreous		0.1	1905. (, İ
	-					-	
	4		37.1° to 40.5° dark g unreathered, with thin	ray,	42.0	2	
	3		of poorly omented, at stone, and occasional	lty a	argi-	45.0	
f	3		of slay-ironstone	1 4184	= Q/	_	
	3		40.5' to 40.5' SAND light brown, well se	STONE	46.0	3	
	=	7*tr	BETATLEDITE		2		
	=	N 2.	40.5' to 46.5' waxy,	-	08	10-0	
	50=	\boxtimes		-24.00	Sa.		
	. =	3.	40.9' to 41.2' low tight, poorly sevelo	engi pped	6	*	
	4	63	fractures, which open	n upo	a2		
	3		42.2' fracture, as	rods	535		
	3	aptra.			45	5	
	4		44.6' to 45.9' with lew angle to 45° sli fractures, as above	ok en	343	55.A	
	∃				us.		
	3		46.5' to 55.2' with m seems and lenses of po occupted sandstone	orly			
- 1	€0- <u>∃</u>		47.6' to 47.7' SAND	STOR			
	=		moderaties semented,	oni	arecus		
	目		50.4' low angle, ti with no slinkensides	ght	ractur	,	
	mhahadaa		53.6' to 53.8'; 55.0		55.21		
	=		SAMPSTONE, well cere tan, calcareous	nted	27.2		
	日		54.4' to 54.9' vary	ا. ہے			
	크			511	7		
	3		55.2' to 55.8' waxy				
	3		T. B. 0 55.8 in shale				
	3						

BOIL	LINES L	os				-46 DE		
PHAJGET			9 4 Ma (0) 50 H	10. MEG	AND TYP	E OF BIT	8" micer: 6"	onre
			Name of the last o	_				
Sathwortern by South District as 2 serve								
			8×6C-67	14. 707	AL HUMBS	A CORE	OXES 5	
				M. FLE	VAT10# #			nds files
-	· ~ [)****		T.				
				16. 101	AL CORE	RECOVER	Y FOR BORING 9	3 1
TOTAL M	WT H 04	-	56,5'	00	real	2.0	Trackte.	
LEVATION			CLASSIFICATION OF MAYEN	HALE	RECOV	SAMPLE		
-	•	+	•		•	-		
] =	1						
]	1					0.0° to 32.5	8" mger
	-	3						
		3			l			
		3						
	-							
		=			1	1	Primary was	non-on) carec
	10 -	1					lenson. Ove	eturies was
	_	∃ .			1		woathering a	1 37.11.
	:	=					locate well	on ented
	-	=					57.8' of 846	d (56.4° to C-44). It
		1					67 was dell	ent. Busc-
	-	=					of 8460-36	nd 6.0' E
	=	=					drilled to 8	1.0' for
	:	1					purposes or	geophysical
	20 -	=	32.5' to 33.7'					
	3	1	Lori			}		
	-	1						
		=						
	-	1						
	-	1	with neveral pobbles	of ire	0, D-			
	:	1	stone, and pyrite, o	al earon	ii s			
	1	=	34.01 to 35.31					
	_ :	1	Loct					
	7	1	35.3' to 53.3'					
						2.5		
			95.31 to 37.11 ton		4,	1 1		
	-	×	TOTAL PROPERTY OF	22	34.0			
			sends with meserous	lemmos		'		
			sands tone					
	-		36.3' to 36.4' SA	d, oal-	-63.0	79.		
			Oareous	.,	_	40.0		
	HU.	The same			5.1	i ¬		
	-		37.1' to 40.5' dark	gray,	42.0	2		
	-		of poorly om ented.	in sear	arel-	45.0		
	-		of sixvimustors	l lense	00/			
	-		40 31 to 40 51 50		11.0-	3		
	-	100	light brown, well	essent.	46.0			
	=	_			7	100		
	-	-	nemenal langua of al	with	atona			
	50-	OLD DE	40.9' to 41.2' 10	w angl	50.5	4		
		77	tight, poorly deve	lopped	6	7		
	-		drying	pen upe				
	=	2000	2	above				
	-		44.6' to 45.9' -	th see	A.S			
	_=		lew angle to 450	licken	344	55.8		
	=	3						
	=	1	seems and leases of	poorly	na.			
	60	1						
	-	1	47.6' to 47.7' 3/	UDSTOR	,			
	_	1						
	=	1	with no slickensid	es girt :	ractur			
	-		53.6' to 53.8': 55	.0' to	55.2"			
	Ξ	1	SAFISTONE, well or	mented		į		
		1						
	_	1	54.4" to 54.9" ve		y	ŀ		
	-	1	55.2' to 55.8' waxy					
	-	1	7. B. 0 55.8' in shale					
	=	1						
ı	_	3	ľ	- 1		- 1		1

ING LOG	Seuthwestern	METAL	Pert 1	Verth !	District of in
D. S.	- France	11. EAY	AND TYP	TV . 110	THE THE ME
Su + W	- France	IL HAR	FACTURE	ER COES	GRAFION OF DAIL
of Engine	era	17 101	Paili	150x	IDISTURNED THIRDSTON
4-06 4-06 4-11-1-164	· P-D				
07 HOLE		1.5 - 1.5		HOUNG E	
Tr DINER	HED AGE PRODU	M 347	E HOLE	127	25 Apr 7u 25 Apr 1
	SE-EN 3.7	17 4LE	AT LONE T	RECOVER	LE 510.8 ±
PTH OF HOL	CCU 56.3 70.0 Rabi CL ANSIPICATION OF IN		ATURE O	111111	Truth
-	CLASSIFICATION OF IN	ATERIALS	E CONE	BOX OR SAMPLE HC	REMARKS (Detting time, werer less depti- tractioning, ore, if eignificant
-				HC.	Proffering, ora., if algorithms
크					Drilling
目	0.0 to 3.7				Drilling 0.0 to 3.7 8 auger 3.7 to 70.0 h fine
3	SAND				tail
1	wery dense, red moist, with gra- fragments of sar	dish-brown,			Note
	fragments of sar	adstone			Cutting return fro
	1.5 to 3.7 with	numerous			hard zones at 53.8
4	and limestone	t, sandston	,		and 59.5 was very Interpretation is
10	. 1				mot on cuttings.
3	SANDSTONE				harder then the z
-1:					at 53.8.
===	9.5 to 10.3 well	ited, excep Lossented	•		
=	13.5 to 53.8				
3	SHALE				
-	gra y, non-calco	-1 AOTE			
-					
20					
-					
=					
1					
<u>-</u>					
1					
===					
==					1
40					_
=					
-					
				l	
3					
_3					
50					
=	53.8 +4 57.0				
=	53.8 to 55.0				ŀ
_	SANDSTONE				
	well cemented				
	55.0 to 59.5				
	SHALE				
	gray, non-calcar	PROUB.			
60	=				
*	3,5,5 00 005,				
-	SANDSTONE				
1	ficult to penet;	nard, dif-			
=	fishtail				
	60.9 to 70.0				
=	SHALE				
	gray, celcareous				
	gray, cattoare our				
70					
3					
7	1			1	
7					

RECORD DRAWING-
SYN DO NO ACTION DAT
DESIGNED BY:
DRAWN SY:
SUBMITTED BY:
ENGINEER:

ow Fit Worth Di	Holo No 37-3 Latrict or sweet		
TUMEN'S DESIG	MAYTON OF DRILL		
I ling 1500 o of over. SAMPLES TAKER	0 0		
ON SHOUND WAT	TEM		
ON TOP OF HOL	5 Apr 74 25 Apr 74 510.8 ±		
ONE RECOVERY	Charles REMARKS (Drilling thin, under have, dupth as membering, etc., it algorithment)		
•			
	Drilling 0.0 to 3.7 8" auger 3.7 to 70.0 4" fish- tail		
	Note		
	Cutting return from hard somes at 53.8		
	and 59.5 was very poor Interpretation is back upon drill action and		
	not on cuttings. The sone at 59.5 was such harder than the zone	<u>-</u>	
	at 53.8.	 	
		-	
		L 	
		- - - -	
		- - - - -	
		RECORD DRAWING-WORK AS BUILT	
		RECORD DRAWING-WORK AS BOIL!	
		STALDO NO. ACTION DATE OFFICIAL OF REVISION	
		U.S. ARMY ENGINEER DISTRICT, FORT WORTH	
		CORPS OF ENGINEERS FORT WORTH, TEXAS	
; [AQUILLA LAKE	
		DRAWN BY:	
		EMBANKMENT AND SPILLWAY	
		LOGS OF BORINGS	
		BAGC-66, 67 AND 3F-31 BUBMITTED BY: INV.NO. DACWIGS-80-9-0085 DATEC: AL	IC 1040
		CONTR. NO.DECKIGS BI-C-0035	SEQUENCI NO.

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Ε

PADISCY	LING LOG	SWD	10. SIZE	MID TYP	X OF BIT	0 1 0 2 E
LOCATIO	quilla La	ration)	III. BAY	W 700 E	MSL	M BHOWN (THE - MEL)
DAIL LING	ALL DAY	east core hole -	12 424	Faili	MQ /	SOO
HOLE HO	Ide were on dra	PAGE 250	19. 707	4.10.0	LES TAK	500 EN DIETURBED UNDIS 'UN
E HAME OF	Schooned			VATION O		
	Schoonede		-	E HOLE	187	June 79 8 IV
7. THICKMES	S OF OVERBURD			VATION T	OF &F HC	× 590.66
B. DEPTH OF	TILLED INTO RO	× 3A.3 644	19. MGH	AL CORE	MECOASE	
ELEVATION	DEPTH LEGEN	CLASSIFICATION OF HATE	MALE	3.COM	BOX OR	Palest & Male
•	b .			BRITA	BOX OF BARRELE	
	=	0.0 to 7.5		1		* Drilling
	=======================================	CI.T.				50 to 9 - 10 ay
	=	0.0 to 3.1 - high r	lasti-	ł		9'to 210' - 776 10
	===	cit; stiff, noist to brown, calc, na	ndy and			21.0 to 414 - 6"
	_=	gravelly.				,
	=	3.1 to 7.5 - net. ri stiff, noist, yello	last,			Soil bagged co
	7	brown with some rec	after			55 for Aguil
	. 7	6', cale, sl. sond	, liney			project lab.
512.3	10'	7.5 to 10.9				Base of waith
		SHALE - highly weather	ered to			ing 28.4'
	35	a stiff clay consist yell, br. and grey, sandy and silty sen	colo.			J
	4 ,	sandy an' silty sent thin).	ss(very			
	3 5	and the				Box5
	7	10.9 to 11.4				
	11111111111111111111111111111111111111	ACENACIOUS LI CITOUR	- hard.			1. 21.0 - 25.7
	3,08	white, calc. E-y/-	ord Gr.			2. 25.7-34.2
	20' = 5	41 4 4 54 0			1	3. 342 - 317
529.7		11.4 to 21.0			-	4. 34.7-40.7
568.4		This section rockbit	ed -		Box	
	3. (call nade from rot	ary		1	Hole was E-log
	3/11	11.4 - 12' - shale				Mar man c. (b)
	3 /	12.7 - 21.) - chal	e w/		0	
	7.5	1 100	.5*•		B.x	
		21.0 to 22.3			-	
	30	dark gray ont yell.	d soft,	Actual		11 41
	3::::	rate brown, nod bard seam(L.T. O. ! thick	c,	1.55 28.4 +	-	- Sondstone washed
	4:	seam(J.T. O. I' thick through section.) sc.	33.3	\	
	3	overdone seconding		+ 14.7 to 36.4	Box 2	
	3	22.3 to 36.2		36.4	27	
51.5	x . =	SANTONS - weathered	till		301	
1		SAUNTON: - weathered 28.47. fine , rained, hard, mod. friable,	mod.			
553.1	-	brown, non cale, she	ley.			
	-				N	
550.1	40	22.3 to 36.2			Vera	
	=	SAT KTOTE(cont)				
i	=	Shale serm :3.5 to and sand; within	24.0			
	4	Shale seam 14.5 to Shale seam 14.6 to	24.4'			
	unlumlum	Shale seem 14.6 to Yery shaley zone fr to 36.2°.	27.21. 05 27.7			
	∃	to 36.2°.				
	7	36.2 to 37.6				
1	=	GRALS - unweathered.	mod.			
	\equiv	Boft, dark Tay, no	n calc.			
	=	thin sandstone seam	s agrid			
ļ	\exists					
	크	37.6 to 40.6				
	=	SANDUTORN - fine gra	ined,			
Ì		cemented, pale bros gray, non calc.	n and			
	=					
	∃	Shaley from 37.6 to 38 to 38.6 - no sha	30.01.			
Į	=	moth above mod, har	d zones	ŀ		
	=	38.6 to 39.3 - v. a 39.3 to 39.9 - Shall	e(sandy) -		
	\exists	39.9 to 40.6 - sl. Above three zones s	re mod.			
	==	soft and sand is fr	dable.			
	₫					
	\exists					
	=					
	=					
	=					
	3					
	3					
	Ξ					
	=					
	ում հավասիայիակարկայիակարիավումիայիությունում					
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	ING LO	_ 8	5wD	WETAL	ina.	- \	Hele No. S
T PR BUREY		-	lake.	11. DAY	MID TYPE	Wo	
E LE CATION	/c_1	ومد مدار	- west come hade	13 MAN	FETTOR	W 1 645	SHATISH SO BATIL
E MILE HO	US	رح		1	taili.	44 15	00
A HI ME OF	DAILT EN		e3ACL - 251	14. TOT	ATION 6	A CORE	HONES
4 MECTIO	Se.	- OOM		ME BAT		1074	Ture 79 7
-				17. ELE	ATION TO	* OF 140	592.11
S. 14 TAL D			37.9	19. Nam	TURE OF	INSPER	TLX A. M
OL E ATION			CLASSIFICATION OF MATERIA		A CONT	BOX OR SAMPL?	(Depting state, mater to
<u> </u>	-	•	0.0 to 4.9		•	†	# Drillian
	=		CLAY				0.0 to 14.5 -
	=		0.0 to 0.2 = high pla sity, med stiff, not black, cale, sandy a	sti-	İ		14.5 to 43:
53'6.9	53-4		black, calc, sandy a	nd			Base of we
		5	0.2 to 1.0 14-2/	plast	i-		@ 24.3
	-	=	city, rtiff, moist, yellowish brown, lis sl. mandy, gravelly 2.5'(0.2' thick).	cele,			
	ΞΞ		2.5'(0.2' thick).	#£			The only s
	/ E		4.9.% 5.5.				taken were
	1	1	SAUD - fine to med. gr	ained,			at 14.8-15.7 +
577.9	_=	/	roist, strong brown, gravelly and clayey.				by the Ag
U 7:4			5.3 to 14.3 - Pagle Por	d Pm.		Box	project lab
	111	5.5	SPALE - highly weather	ed to		Box	
	-		a stiff clay consiste wery little chale str except from 6.4 to 7.	ucture 0 -	ere	14	Boxs
	20)	br. gray, and acre	ad.			1. 14.5 -
\$ 70.7	21.5-2	: 5.	calc, sandy and silty	, exp.		Box	2. 19.3 - 1
	7	7	14 7 40 41 0			E	3.24.3 - 1
	=	7	14.3 to 14.8 AREMACINOUS LIUSSTONE -	he-f			4. 28.9 - 3
	=		white, calc, massive,	well		Box.	5. 33.9 - 3
	111		COMMITTEE CAN'T BY A	arsu p		3	6.387-4.
564.1	20/-		14.0 to 15.7				
	30	:::::	(rx classi), gray, and	. soft		0	111
	Ξ		(rx classi), gray, and br., calc, scattered sand seams,	ti:in		Gex 4	Hole was E
	3		15.7 to 18.3				
		: : : :	SAL KENOLB				
555.9	7/ 3		15.7 to 15.6 - menthe	red.		G.X	
0.5.1	=		fine grained, red so gray, sl. calc, poor mod. cemented, friab	ft, ly to		5	
	=		nod. cecented, friab limonitic c top of s	le, ection		0-1	
5'8'2.6	70	2.3	(cont)			Gex.	
	42.	- 1	SAUDIAODE (cont)			Box	
549.0	_	5.2	16.6 to 17.0 - weather	red,			
	=		16.6 to 17.0 = weathe fine, hard, well cen light pale brown, sl	calo			
	-		17.0 to 18.3 - fine,	poorly			
}			cemented and v. fria (nuch washed out by ing circulation), gr	irill-			
			sl. calc, sl. shaley				
			18.3 to 19.3				
	-		SHALE				
	=		18.3 to 18.9 - weather soft(rz classi), yel	red, L. br-			
			noft(rz classi), yell and gray and red, sl. sandy.	calc			
	777		18.9 to 19.3 -as above cept v. sandy.	ex-			
	=		cept w. sandy.				
	1		19.3 to 21.5				
	111		SAMPSTONE - weathered, mod hard and mod comes	ted.			
	=		local dip(L.T. 10") @	joint	d,		
	111						
	111		of 1.75 to 2.75) 0 20 21.1 = both 0.1 this	.3 & .k.			Base of sendst dip of 12°.
	1		21.5 to 28.1				Shale beneath shows no dip
	7		SHALE				The above two
	1		21.5 to 25.8 - weather	red,			came out in
	=		brown, non calc, lin	trong	,		Chale arhibite
	1		s.s. seams(mod hard pale brown) C 21.5 d	and			up to 7° from 22.5°.
	The state of		from 23.5 to 23.81.				
			23.8 to 28.1 - weather of fractures till 24 unweathered, dark gr	.3, th	en n		
			calc, nod soft, so. sand seams, v. pyrit 25.0 to 25.1 and 0 2	thin io fr			
	1		25.0 to 25.1 and 0 2 Fod, hard s.s. from	6.2.			
<u></u>	_ =		3'od, hard s.s. from 26.2 and 27.1 to 27	.31.		L	L

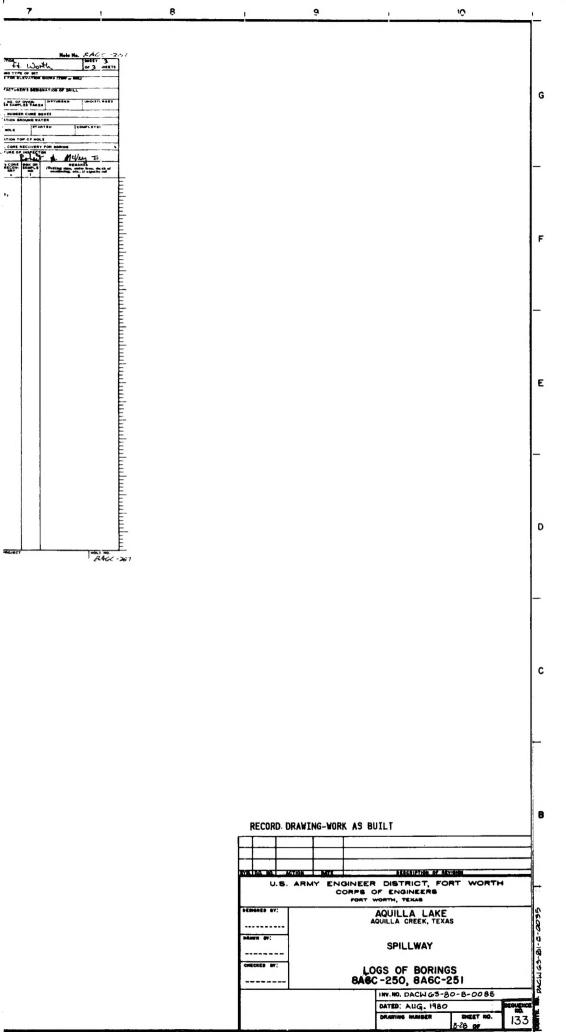
						Hale I	BALC 2
BOSIL.	LING LO	6	SWD	METALL AND	1. W	orth	OF A MEETS
La Extio		1 0	Lake	TT BATT ME	TYPE OF BIT	AZI C.	-
(M 1L L HI	AGENE	CE	- west come hada	13. HAM FEE	villes 15		
M LE HO	· (45-m-		3ACC - 257				
MANUEL OF	S.S.	Loon	per	16. TOT L M	ON SHOUND 1		6
	- CAL []			16. DATI HO	16	Tum 79	2 Tyun 79
	RILLED II			M. TOT L C	ONE RECOVE	OLE 59	99.000
	EFTH OF	HOLE	43.2	W. SIGE (TU)	ORE RECOVE	Elet A.	Milky In
. E. ATION	DEPTH	FERENC	CLIGHTICATION OF BATE	TIALS A	ONE SAME	1	
	=		0.0 to 4.9			# Dni)	3
			CLAY			0.0 to 14	of Frasim. F
	=		0.0 to 0.2 - high p city, med stiff, o black, calc, sandy	lasti-		14.5 to	43.2 - 6 core
76.9	5.3-		black, calc, sandy gravelly.	an/l		Bee of	worthering
		5	0.2 to 4.9 - high/r	ed planti-		@ 2	4.3'.
	-	\exists	city, stiff, cist yellowish brown, 1	imey.			
	=		sl. mandy, gravell 2.5'(0.2' thick).	,	1	The on	ly samples
	"=)	4.9.% 5.5.			عد اه	were those thored shale
	1	1	SAND - fire to med.	grained,		at 14.8.	5.7 + 18.3-193
Sugar.	=	7	gravelly and clayey				Aguilla
7.9		9 8 9	5.3 to 14.3 - Zagle 2	ord Pa.	JA D	project	lab.
	1	5:1	SPALE - highly weath	ered to	Box		E
	=		a stiff clay consist wery little chale mexcept from 6.4 to	tency.		Boxs	_
	3.	·	structure is annere	nt. vell.	14	1. 14.5	- 19.3
	20	:: 5	br., gray, and some calc, pandy and sil xl's (11',	ty, eyp.	Box		- 2×3
, 5,7	25-	7	AA-0 1 11',		3	3. 24.3	-
	1	7	14.3 to 14.8			4. 28.9	- 33.9
	111	É	white, calc, massiv somented, Fage For	- hard, e, well	Box	5. 33.9	- 38.2
	=		somented, Fage For	d Group	3	6. 30.7	
64.1	20/-		14.3 to 15.7			6. 30.7	-
	=		SHALE - weathered, n	od. soft	-	1	, [
	30		(rx classi), gray, a br., calc, scattere sand seams.	d thin	G-x	Hole w	s Elossed.
	-		Bana sexus.		4		E
	=		15.7 to 18.3				Ē
	Ĩ		SATURE FOL B		Bex		E
55.9	31.5		15.7 to 15.6 - west fine grained, soi gray, 61. calc. po sod. cemented, fri	tered,	5		E
	=		gray, sl. calc, po- mod, cemented, fri	ble.			E
4-2.6	39.6-		limonitie " top of (cont)	section,	Gey		F
	-				Box		1
_	42	1	SAND/NOLE (cont)		6		<u> </u>
49.0	132		fine, hard, well of light pale brown,	ered, mented,		1	E
	=						
	=		17.0 to 18.3 - fine cemented and v. fr (much washed out by	iable della		1	E
			ing circulation),	Tay.			
			18.3 to 19.3				
			SHALE				Ē
			18.3 to 18.9 - west! soft(rr. classi), ye	11. br.			indstone has
	1		and gray and red, a	i, calc.			
	=		18,9 to 19.3 -as abo	ve ex-			
	=						
	=		19.3 to 21.5				
	=		mod hard and mod com	ented.			Ė
			pale brown, non calc local dip(L.T. 10°)	, jointed, 0 20.5			Ē
	=		to 20.7'.				
			of 1.75 to 2.75) 0 21.1 = both 0.1' tr	:0.5 &		dip of 1	ndstone has
	=		21.5 to 28.1			Shale be	seath s.s.
	=		SHALL			The above	-
]		21.5 to 23.8 - weat	hered.		DAME ON	t in two suc- core pulls.
			brown, non calc, 1	inoniti.		Shale oxh	bits dip of
	=		pale brown) C 21.5	d and		up to 7'	from 21.9 to
	=		from 23.5 to 23.8				
	1 7		23.8 to 28.1 - west ed fractures till unweathered, dark	her stain-			1
	=			24.7, 60.84	1	1	B-r
	- In						
	Henlan		unweathered, dark calc, red soft, so sand socks, v. pyr 25,0 to 25,1 and C Fod. hard s.s. fro 26,2 and 27,1 to				

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BRILL	LING O	C 5.	dwic.	SHEY ALL	A TON	Wor	th	SAC DEET	-
WEST TOP O				w. size			SHOWN (THE - ME)		
LOCATION	A 10 1	100 or 340	-	1				<u> </u>	
Bin. Luc	ALL V	y - 13	rest come bela	12. 10.00	ACTUR	er i semi	MATION OF DAILL		
MOLE NO.	(Ac o =		ng thirt	13. 707	M. 10.25	OYICA-	DIATUR DED	UNDIT	***
HAME OF			+: 46C- 251	14. 707	AL HUMBE	R CURE DO	24.61		
DIRECTIO				IR ELE	VATION 64	POLICE WATER	TER		
- VEATE				M. DAT					
THICKNES	S OF L /E	-				OF 0 F HON.		_	
DEPTH OF				10. SHEN	ATURE OF	e CS	FOR BORING		
TOTAL D		-	C. 101/2/547100 05 H4770	1	s cone	201.00		4 Tr	_
EVATION	DEPT 4	LEGENO	CLASSIFICATION OF MATER	ALS.	NECOA.	Man CR	(Brillian) steel see	If adjust the	-
			28.1 to 36.3				•		
	Ε [1	GALXAOFS - m.weather						
	- =		gray, non cr. c. rod	coft to	ο,				
	=		comented, shuley, p	rod.					
			C 50+6°+						
	=		friable af er 32.	ted an	1				
		Į	irianie m er je.						
	3		T() . TO (i i			
			36.3 to 39.6						
	=		non calc, so this	k sray	-				
	- 4		sandstone/si.tstone	Senis		1			
	3		and lemmes.						
		1	Yod, hard, pule brom (lironite ? lense	m silt					
	1		37.8 to 37.9%.			1 1			
		1				1			
	1	1	39.5 to 43.2			1			
		i	SAN KINOLE - fine proj	ned.					
	1 3		mod hard, pol. comm						
		ļ	Yery shaley 'ron 40	2 to					
	3		40.61.						
		1	Shale seam from 41.	to					
			Shaley sone From 41.	7 to					
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TO ACCOMPANY FINAL FOUNDATION REPORT

-	146 L0		379		AMB 21:	Pt 3	orth augur
	s. Den	ntes or Jis		W. MIE	AND TYPE	EVATION	4" augur
è		-tee or 310	when				
41.	4 0E 4CV			12. HALE	UP ACTUR		SHATION OF BAILL
	,			13. 707	4. The	OVER-	INE 1500
			104-1			_	
	AL CO		174-1	14. TOT.	AL MUMBE	R CORE	0X\$1
er	0# HOL	-		_	VATION G		ATED 10000 LETED
		-CLIMED	DEG. FROM VERY.	16. DAT	E HOLE		8 Karch 78 28 March 7
				17. ELE	YATHON TO	P OF HO	LE
		TO ROCK		16. 707	AL CORE	RCOVER	Y FOR BORNES
				19. 3IGH	ATURE OF	INSPECT	Telest A. Moles Is.
~ _	TH OF		9.0		1 CORE	BOX OR	KANDO H. PI VOL B.
•	PEPTH	FERENO	CLASSIFICATION OF MATERIA		S CORE	BOX OF	(Deliting store, outer been, stopped of
-+		•				1	•
- 1	=		0.0 - 6.5				1. ***
-			CLAY		ı	A	Dry bole.
- 1	-				l	L.	2 7
- 1	=		0.0 - 2.8 high pl	asti-	l		2. Jars:
- 1			0.0 - 2.8 high pl city, very stiff, sl	16ht-	l	1	A. 0.0 - 2.8 B. 2.8 - 6.5 C. 6.5 - 9.0
- [=		ly moist, light gray	and	1	В	c. 6.5 - 9.0
j	=		brown, cale,		1	~	,
-			28 - 65 11-	-			
- 1	=		2.8 - 6.5 low pla hard, dry, strong by	nown.	ŀ		
	-=		calc, silty.	,	l	c	
ı	i Prendimeteration	L					
- 1	=						
- 1	.0.0		6.5 - 9.0			1	
- 1			SACD - mostly fine and	mund	l		
- 1			dry, dark brown, slig	btly	ľ		
1	=		calc, silty, slightly	, ~			
1	=		gravelly.				
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PROJECT		- 1	SWB	10. MIE	AND TYPE	Pt M		
LOCATION	& Dear	a Is	ratio)	TI. BATI	JE 748 E	EVATION	SHOWN (TEM - EEL)	
Mar. Line				15. HAH	UP ACTUAL	IN DES	SHATION OF BRILL	_
USCR				18. TOT	1.181.25	Pat 1	ng 1500	HETUR
	(A.)		10A-2					0
_	MILLEN T			16. ELE	VATION OF	ROUND TA	TER	
	·			N. BATI		1874	ATED COMPLE	arch
THERMES				17. ELE1	VATION TO			
DEPTH SE				N. 707	AL CORE	RCOVER	7 FOR BORING	
. TOTAL DE	PTH 0F	HOLE	5.2	1		a.w	A. MeVey 3.	
ELEVATION		LEGEM	1	4.5	WECON.	SAMPLE HO.	Prilling time, mater from monthship, see, if our	
•			•		•	-		
	=		0.0 - 5.2				1. *** Dry hole.	
	=		CLAY			1		
	=		0.0 - 2.8 high p	lasti-		В	2. Jars: A. 0.0 - 2.8	
	=		city, very stiff, a	light-		C	A. 0.0 - 2.8 B. 2.8 - 4.3 C. 4.3 - 5.2	
į	=		ly moist, black, no		1	C	u. 4.7 - 7.2	
	6.0		2.0 - 4.3 low pl	ast,				
	=		very stiff, slightle moist, grayish brow	m,				
	=		slightly calc, sand	y and	[
	=		1					
	=		4.3 - 5.2 low pl very stiff, slightl	ast,	1			
	=		moist, non calc, sa	ndy				
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DRILL	MIS LO	e "	STID	-	ATHOR	Pt W	arth	DE 300275	1
PREJECT				m. MIE	AND TYPE			iger	1
Aquil!				II. BATI	E PER E	TANAL	SHOWN (750 @)	ME)	1
		an w 81	atten)	15 848		TO COME	HATION OF DAIL		1
MILLING	AGENCY			1		Fail:	ing 1500		
USCE HO.	(As don		- m.	19. 101	AL 10.07	OVER-	H DISTURBED	O	1
			10A-2	-	-				1
-	MILL COR			18 8LE	VATION 64	HOUND WA	TER		1
BINGC VIE	H 97 HOL			M. BATI			Warch 78) E 040 LEVED	1
(2) vanti		HELME	DES. PROM VERT.					28 Karch 78	1
-	6 of 0VE	ROUNDE			YATION TO				1
-				10. TOT	AL CORE OF		FOR BORNE	,	1
TOTAL M			5.2	1		rw.	A. MeVey	¥.	1
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	1 3	1	0.0 - 5.2				Dry hole.		E
	1 -		CLAY		[-			E
	1 3	ł	1			\vdash	2. Jars:	2.4	Ē
	1 3	İ	0.0 - 2.8 high ;	lasti-	i	В	A. 0.0 -	4.3	E
	=		city, very stiff, a ly moist, black, no	n oale	L	C	B. 2.8 - C. 4.5 -	5.2	E
	. =	-			Ī				F
1	6.0-	1	2.8 - 4.5 low pl very stiff, slight	ast,		1			F
	=	1	moist, grayish brow	7	l				F
	-	1	slightly calc, sand	y and					F
	=	1	milty.	•					E
	=	1							F
		1	4.3 - 5.2 low pl very stiff, slightl	ast,					F
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	-	}	and silty.		l	l			E
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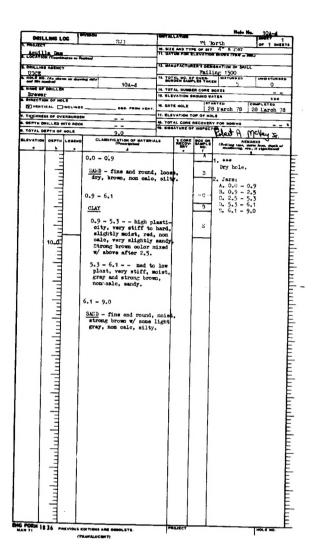
							Hele No.	104-3
	LINE LO	× "	SWD		ATHE	Pt W	orth or	1 Degrave
Aqui.				10. 202E	MID TYPE	EVATION	HOW CHE - MES	
LOCATION	(C		eten)		Transport	THE REPORT	HIATION OF BAILL	
DRILLING						Pail	ing 1500	012704250
USCE	(As obs			12. 707	ib. Miss	SY VAKE	m 4	0
			10A-3	H. 701	AL HUMBE	R CORE I	OKES	
Brew	OF HOL	L.R		-				### E7ED
W) VERTI			BES. PROM VERT.	16. BAT		_ 2	8 Karoh 78 28	tarch 78
THICKNES					AL CORE		Y FOR BORING	1
TOTAL DE			0.3	16. SIGH	ATURE OF	MIPECT	Blat A. Mc	Vey Ir.
LEVATION	-	_	CLASHFICATION OF MAYERIA	LE	A COURT	BOX OR	DOMANCE.	7
•			(Procedured		- Bir	-	Charles and make he	
	11		0.0 - 6.0			A	1, ***	
	_=		CLAY			-	Dry hole.	
	=					В	2. Jares	
	=		0.0 - 1.5 mod pla city, stiff, moist,	black	1		A. 0.0 = 1.5	
	=		non onlo, very sand	and		٥	A. 0.0 = 1.5 B. 1.5 = 3.1 C. 3.1 = 6.0 D. 6.0 = 8.3	
	_=		silty.				D. 6.0 - 8.3	
. 1	=		1.5 - 3.1 high p	last,				
	=		very stiff, noist, non oalo.	red,		ָ פ		
	10.0							
	10.0		3.1 = 6.0 = - high to plast, very stiff,	o med slight				
	1111		ly moist, strong br	OWE W				
			some brown mixed in onle, silty.	, non				
	7							
			6.0 - 8.3					
	Ξ							
	_		SAND - mostly fine and moist, yellow to some	color				
	3		less lenses, non calc slightly gravelly.	, silt	٠,			
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DRIL.	LINE LO	× _	59.)
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S. DRILLING			
HRCE	(An above	,	an wait
	DRILLEA		104-4
Brewer			
T VERY			D DEG. PR
. Тијские			
BEPTH D			
LEVATION		HOLE	CLAMIFICATION OF
	h	4	(Descript)
	7		0.0 - 0.9
	=		SAND - fine and
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	=		0.9 - 6.1
	=		CLAY
	E		0.9 - 5.3
	=		oity, very st slightly mois
	10.4		calc, very sl Strong brown
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	크		5.3 - 6.1
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RECORD DRAWING

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	AYREE		Made No. 104-3
		Pt 1	forth or 1 mentrs
*	AND THE	CEVATION	4" auger
	UFACTURE	EF I SEL	SHAYION OF BRILL
T	4.12.25	Pail	ing 1500
7	AL HUMBE	A CORF	en 4 0
	VATION OF	ROUND W	ATER POP
	EHOLE	1 2	8 Karch 78 : 28 Haroh 78
7	ATION TO	OF OF HO	Y FOR BORING
44	ATURE OF	HOPECT	Blat A. McVey Ir.
	T COMP	PON OF	(Prilling State, State, Septiment of Street, others, o
+	•		and a significant
		A	Dey hole.
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Ł		-	A. 0.0 - 1.5 B. 1.5 - 3.1 C. 3.1 - 6.0 D. 6.0 - 8.3
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NOTE: SEE PLATE 1-2 FOR BORING LOCATIONS.

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	U.S.	ARM		RPS	OF ENGINEERS		WORT	1		
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TO ACCOMPANY FINAL FOUNDATION REPORT